

THE
Gentleman's Recreation:
OR THE *966.c 2*
SECOND PART²
OF THE
ART of GARDENING
IMPROVED.

Containing several New EXPERIMENTS
and Curious OBSERVATIONS relating
TO FRUIT-TREES:

Particularly, a New METHOD of building
Walls with *Horizontal Shelters*.

Illustrated with Copper Plates.

-----*Si quid novisti rectius istis,*
Candidus imperti; si non, his utere mecum. Hor.

By JOHN LAURENCE, M. A.
Rector of *Yelvertoft* in *Northamptonshire*.

To which is added by way of APPENDIX, A new and
familiar way to find a most exact Meridian Line by the
Pole-Star; whereby Gentlemen may know the true Bear-
ings of their Houses and Garden-Walls, and regulate their
Clocks and Watches, &c. By *Edward Laurence*, Brother
to the Author of this Book.

The SECOND EDITION.

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THE
Gentleman's Recreation
OR THE
SECOND PART
OF THE
ART of GARDENING
IN AN OLD

Containing the
Second Edition of the
Gentleman's Recreation
to which is added
Particulars of the
Garden of the
Gentleman's Recreation



BY W. O. M.
AND
THE
GENTLEMAN'S RECREATION
IN AN OLD
EDITION
AND
THE
GENTLEMAN'S RECREATION
IN AN OLD



THE PREFACE.



THE Encouragement and favourable Reception which my former Treatise of Gardening hath met with in the World, makes me here engage a second time on the same Subject, and venture to enlarge on some Experiments and Observations, which the Nature of that intended short Essay suffered me only just to touch upon.

I was afraid of engaging too far at first, lest I should not be able to make an honourable Retreat: But since the Gentlemen as well as Clergy, have been pleas'd to accept and like what I have delivered in a plain and familiar manner, and

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have generally honoured it so far as to complain only of its Brevity; Decency and good Manners oblige me to remove those Complaints, and to address my self now to the Gentlemen, as I have already done to those of my own Order, persuading them also to love a Garden by the same two powerful Motives of Pleasure and Profit.

The Apology for engaging in these Matters as a Clergyman, I will not repeat, because it hath been very kindly admitted: Neither indeed do I look upon this Science so remote from the Business of a Clergyman, as is generally thought. It is a mix'd Subject; and the Moral is, as it were, interwoven with the vegetable World. Man having an active, busy Principle within him, it is of great Consequence what sort of Entertainment and Exercise of the Mind he chooseth; for, according to that Choice, he either dignifies or dishonours his Nature.

It is no small Felicity to a Man, when his Pleasure tends also to his Perfection:

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fection: For most Men's Pleasures are such as debase their Natures; and we commonly gratifie our lower Faculties, our Passions and our Appetites; and these do not improve, but depress the Mind.

All the extravagant Pursuits of Ambition and Avarice, of Lust and Revenge, of Luxury and Intemperance, do of themselves tend to debase Man's Nature, and sink it down into a great Resemblance of that of the Beasts below him. Whereas on the other side all the manly Exercises of Reason and Religion, of Devotion and Contemplation, of Justice and Charity, give such Beauty and Lustre to human Nature, that it is raised thereby to a very near Resemblance of the Angelick Order: So that indeed according to the way of Life, such is Man's Nature; either made worse, or much improved.

'Tis true, we know not the Nature and Laws of the Union of Soul and Body, and therefore cannot easily determine how the Thoughts of our Minds and the Mo-

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tions of our Bodies act in Dependence one upon another. We know not what are the primary Differences of Genius's and Complexions, and how our Intellectuals or Morals depend upon them. But I have often thought, there are many Ideas of Pleasure, that have lain buried in the Ruins of corrupt Nature, for want of being early roused, and made to exert themselves by proper Objects, before the over-bearing Power of sensual Delights hath taken place. And therefore I question not, but we might soon see a more virtuous and enlightened Age, if it were but rescued from the intolerable Trammels of Logick and Rhetorick, the Aversion and Bane of Youth, and some of the easy Parts of Natural Philosophy, Practical Mathematicks, and Gardening Operations substituted in their Place: By which means, young Persons may be discreetly tol'd on by easy and familiar Methods, in all such innocent Exercises of the Mind and Entertainments of Life, as may probably lay a Foundation for a contemplative

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templative Genius, and produce a virtuous and useful old Age.

Had Man continued in the Garden of Eden, as he came out of the Hands of his Maker, I doubt not at all but Contemplation and Devotion would have been his chief Exercise and Delight; as most suitable not only to the State, but to the Place of Innocence: And I as little doubt, that if Angels were confined to these lower Regions, they would seek the Retirement and Pleasure of a Garden, as most agreeable to their heavenly Dispositions.

* How soon and in what manner a Palingenesia or Renovation of Things is to be expected in the Millennium is not my proper Business here to enquire: But thus much is to my present Purpose to say, that the more we accustom our selves to the several intellectual Pleasures of Meditation, Contemplation and Devotion, the fitter shall we be to regain Paradise; those divine Exercises raising Men's Minds into

* Isa. 65. 17. Mat. 19. 28. Act. 3. 21. 2 Pet. 3. 13. Rev. 20. 4. Ch. 21. 1, 2, &c.

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a greater Similitude of the divine Nature, that so, in Iræneus's * Sense, paulatim assuecant capere Deum, they may by degrees accustom themselves to receive God.

The Exercise of a Garden and the Entertainments of Contemplation will appear still the more desirable, if one considers how difficult and dangerous a thing Conversation is now become, and indeed made so by the corrupt Passions and Humours of Mankind. For how difficult is it, for even the wisest and most cautious Man, to start a Subject in Conversation that shall be pleasing and inoffensive? To talk of the Weather is low, mean, and peevishly. To extol the Excellencies of Friendship, and to enumerate one's Friends is good; but how hard are they to be met with? To rail at our Enemies, and to detract from those we envy, how unchristian is that Practice, and truly offensive to a great and generous Soul? And then I suppose I need not tell a thinking Man the Uneasiness of being ty'd to the impertinent Con-

* L. 5. Cap. 32.

versation

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versation of such, as can talk all Day and say nothing.

Indeed the Subject of Philosophy, or any real useful Point of Learning, is pretty; if one could but ordinarily hope to find Philosophers or learned Men. Besides, (shall I not say?) It is not every Point of Learning that must be started or will be born with. Divinity for instance; especially any of the more nice and abstruse Points thereof, is one of the *Noli me tangere's*. Articles of Faith explain'd, which the Church is in Possession of, are held by a sort of entailed Right from the fourth Century down to the present Times: How much improved, I will not say. Infallibility is indeed plainly disclaim'd by Protestants: but yet, strange as it may seem, an indisputable Authority in the Church will be maintain'd, and private Persons will not be suffered to doubt of, or dispute so sacred a thing as a long Tradition.

What now is to be said to these things? Learned Men are not to be met with every

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very Day, and Texts of Scripture are already settled: There remains hardly any general Topick of Discourse but Politicks; and yet, tho' every one pretends to much Skill in it, that of all others requires the greatest Prudence to enter into it, or to manage it without danger of Offence to one side or other. For except a Man can resolve to be thorough paced, to go through thick and thin with a Party, he will hardly escape being charged with want of Zeal or want of Courage; tho' all wise By-standers may easily perceive, that there are Numbers of both Parties will run into very unjustifiable Extremes. The Church, without any certain Idea or determinate Meaning of the Word, is always made the outward Mark of Zeal of one side and t'other: And if the Measures that are concerted for the promoting her Interest are not lik'd, you will not fail to be branded (if not for an Enemy to the Constitution, yet) for a Renegado or a False Brother.

Who

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Who would now chuse to thrust himself into Company, when Company and Conversation are become so ensnaring and dangerous to an Honest Man? I confess, if Preferment be the thing a Man aims at, as what he either wants or waits for, if he have but Wit and Parts, he may in time compass it, by going all the Lengths of a Party: But I am now speaking to Gentlemen of Honour and Probity, who would serve their Country by those two Principles, and themselves with every thing that is innocent, safe, and entertaining. And shall I need to tell such, that all the best and noblest Entertainments are to be met with in a Garden? There a Man may converse with his God, by contemplating his Works of wonder in each Flower and in every Plant: And then the devout Admirer cannot but lift his Eyes and his Heart in praise of the great Creator of all Things.

There a Man may converse with himself, and consider, that whilst he is uncorrupted by vain Conversation, whilst
be

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he is busie and innocent, his Garden is his Paradise, a sort of Heaven upon Earth, that gives him a Disdain to those low sorry Principles of Ambition and Avarice, that hurry on other Mortals to pursue the vain Phantoms of Honour and Wealth.

Others may plot, dissemble, and struggle to get Authority and Power, and All, it may be, to no purpose too; but here a Man is Lord of All, the sole despotick Governor of every living Thing. The tallest Cedar, as well as the lowest Shrub, is subject to his Government and Care. Faults may be found and mended without any repining or starting at Alterations. The Wanderer may be reduced, and the Crooked made strait by easie and gentle Methods: And because the Strength and Prosperity of any Government consists in the Multitude of People, the Barren may be made to rejoice in a numerous Issue.

In short, whatever Government even the Fancy can paint to him to be either better or more beautiful, that Form is presently submitted to. This is no imaginary
Pleasure

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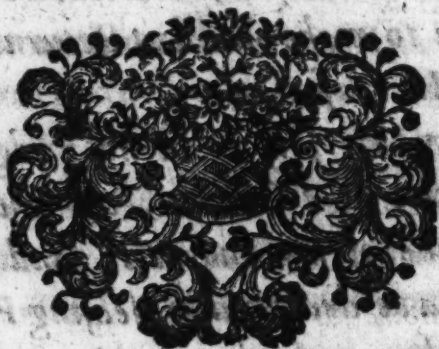
Pleasure neither, but real and personal; a Garden affording such pleasing Morals in all the Parts of it, that nothing but the greatest Stupidity could carelessly pass them by unapply'd.

However, it is not my Business here so much to act the Part of the Divine as the Politician; not so much to direct the Application of these things to the Mind, as to lay down such Rules of Government, as may serve to heighten the Satisfaction of a thinking Genius; A Man must needs of course form pleasing Ideas to himself, when he finds Heaven and Earth, Art and Nature all conspire to make him happy in his Retirement, and each Subject of his Care to make obedient Returns of Profit and Increase.

I own my self to be no Judge of Politicks out of a Garden, as what I take to be none of my Business; and whether in it I have drawn any pleasing Picture of Monarchy, or said any thing to the purpose of good Government, I must leave to the Judgment of all those ingenious Gentle-

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Gentlemen, to whom I here address my self; and shall only add, That I have the rather persuaded my self to engage in this Subject, with this View and Hope; that what I have said of the Pleasure and Profit of a Garden, may in some degree serve to abate the prevailing Vices of Ambition and Revenge, and re-instate a more manly Pleasure, in the room of some boisterous Exercises and fashionable Diversions, which too often end in the Dishonour of Almighty God and our Holy Religion.



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THE
Gentleman's Recreation:
Being a SECOND PART of
the Art of GARDENING
Improved.

The **INTRODUCTION.**

NOTHING is of greater Con-
sequence to any Gentleman
that is a Lover of a Gar-
den, than to have a Piece of
Ground near him of a plant, fertile
Nature, a Soil easy and kind to all
sorts of Trees and Plants, either na-
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2 *The Pleasure and Profit of*

rural or made so by Art; because then he has the Pleasure of seeing every thing prosper and flourish, that he either sows or plants. Whereas the Want of such a Blessing gives continual Uneasiness to him that has waited long, and still waits in vain for the desired Fruits of his Labours; especially if it hath been attended with great Cost and Charge ill apply'd. Happy indeed are those Persons that have a good Soil, where Nature itself performs so liberally, that there needs little Labour, Cost or Care to make both their Kitchen and their Fruit-Garden to abound with Plenty of every thing best in its kind; such Persons are not so much concern'd with what I have here to offer to the World, as those are, who have many other Difficulties and Discouragements superadded to the constant and necessary Care required in a Garden either of Pleasure or Profit. However, I flatter my self the following

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ing Instructions may give some general and useful Hints to such a Genius, as loves to *improve* and *assist* Nature, and has a true Relish of the Beauty of Prosperity and Plenty in a Garden. For which Purpose I have always endeavour'd to consult the Inclinations of Nature, that the most *natural* Methods might be taken to have the most and the best of its Products. For I think 'tis a Rule amongst Naturalists, that we should *follow* Nature and not *leave* it. Though we may safely do many things, which Nature *would not* or *could not* do; yet we are never to hope for Success, if we do any thing contrary to Nature *.

* I could never understand, why some Persons should take so much Pains to invert the Order of Nature, in making the Branches of some Trees take root, and then dig up the Roots to convert them into Branches; which if it *could* be done, so as to continue, could be of no manner of use; and must be reckon'd among the *Difficiles Nuge*. The like may be said of those Attempts of grafting Apples on Pear-Stocks, or Vines on Cherries, &c.

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In my former Treatise on this Subject I endeavoured, not only to speak plainly and intelligibly, what I thought proper to assist Nature in all its Productions; but also to range what I said in Order, and put it into some agreeable Method. Whereas in this, which I design rather as an Appendix to the former, as it consists of some additional Improvements and Observations, I hope it will not be expected that I should observe a very exact Method. All those ingenious Gentlemen, for whose sake I have been persuaded to communicate some farther Thoughts on this Subject, will, I presume, excuse and pardon that Defect; provided their Expectations be but in some sort answered, by meeting with something *new* and *instru-*
ctive: And yet I desire nothing may be embraced for its *Novelty*, except at the same time it be supported by *Reason* as well as *Experience*. So that I humbly hope, if I do venture to go
out

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out of the common Road, it will not be interpreted to be any sort of *Heresy* in this Science; because I now address my self to the politer Part of the Laity, to the Gentlemen of good Sense and Judgement, who are not so apt to *shrink* and be *affrighted* at new Discoveries of undeniable and rational Truths, as some others are, who by their Profession are commonly tied down all their Lives to one particular Set of Thoughts; whereby their Understandings and Judgments are often cramp'd, and are not suffered to act out of their own narrow Sphere.

If this small Essay for some farther Improvements in the Art of Gardening, happen to fall into the Hands of some such *unexuberant*, narrow soul'd Persons, I easily guess the Reception it will meet with. But for others, Gentlemen of a liberal Education and general Knowledge, with such I have been so well acquainted, especially

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since the Publication of my former Treatise, and have received so many singular Favours from many of them unknown before, that as I think my self here obliged to acknowledge their undeserved Civilities, so I must also say, that I fear no Hardships or ill Treatment from that Quarter. I am very easy to think, that this small Essay, humbly submitted to the Judgment of wiser Persons than my self, will not fare the worse for coming from a * Clergyman, who always owns these Things to be the Fruits of his *Diversion*, not of his *Study*; having other Cares of much greater Moment always upon his Hands, and that lie next his Heart, even the difficult Charge of instructing and *leading* many Hundreds of Souls in the Way to Heaven.

* It may not be amiss to take notice here of the Answer which a profess'd Gardiner gave to a worthy Gentleman, a Friend of mine, who happen'd to ask him how he liked the *Clergyman's Recreation*. *Why alas! Sir (says he) the Author is a Parson.*

Having

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Having premised thus much; before I proceed to give any particular Directions and Rules, I would have it yet observed, that the Design of the following Treatise is to put Gentlemen into a Method of having the *most* and the *best* of all sorts of Fruit, and that in the *easiest*, the *cheapest* and most *expeditious* way. Such an Attempt, I presume, will not be *unacceptable*; and those who have vast Gardens, much Walling, and a Multitude of Trees, and at the same time not Fruit sufficient for their Table, will think it very *seasonable* and *necessary*. I suppose I need not make an Apology for this; there are so many Gentlemen that have a feeling Sense of it. It will therefore be worth while, first to assign the general Reasons and Causes of that Defect, and then we shall be the better able to seek for a Cure and apply a Remedy.



The First General CAUSE of
BARRENNESS.

ONE great Cause of the want of Fruit in many Gardens, is, a lying too much open and exposed to the Winds; especially the *West* and *South-West* Winds, which in many Parts of the Year made terrible Havock and Desolation in our Island; not only by *blasting* the Fruit in the Spring; but by *chilling* and *starving* the Fruit all the Summer, so as to hinder its coming to any due Maturity. And with respect to Standards and Dwarfs, there is no little danger of the Fruit being torn off before 'tis ripe by the Violence of unguarded Winds. There are commonly many Causes concur to the increasing this great Evil. As for instance; an open Vale betwixt two Hills at a distance; a long Canal with tall Trees on each side; or some Groves of Trees with large

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large Opens or Visto's between them. These, with many other accidental Causes of Buildings, &c. do many times occasion such perpetual and violent Currents of Wind, that 'twere a vain Expectation to hope for either *much* or *good* Fruit in a Garden that lies open and exposed to such external Violence. I need not therefore say that the first and earliest Care must be taken to guard against this dangerous Enemy, by planting Limes or Elms in a *Quincunx* order at a convenient distance from the Garden; but as near to one another as may be, that no time may be lost in procuring the desired Fence and Security.

However I am well aware, that the Situation of a Garden may be such, that this Evil may be in a manner incurable; and a Gentleman may have the Misfortune to find his Garden upon such a Hill, and so exposed on all sides to the Violence of Winds, that no artificial Shelters *can* secure him.

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him. In all such Cases, there is no other Remedy, but to change Place, to look out for a more convenient Situation at some greater distance from the House, where a proper Piece of Ground may be allotted for a Fruit-Garden and nothing else; whence even Flowers and all unprofitable Weeds should be banish'd. Neither ought this to be look'd upon as a chargeable Scheme, attended with any doubtful View of Success: For I can easily make it appear, that in many other Cases besides this of being without Remedy subject to blasting Winds, it is the surest and most unexceptionable Method, to have a peculiar Piece of Ground allotted by it self, distinct from that which is properly called the Garden of Pleasure: The Description whereof I shall reserve to its proper Place; and shall only observe here, with respect to the particular Point I am upon, that there are these following Advantages attending

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tending the present Scheme. For,
(1.) This will once for all effectually cure the Evil complained of: Inasmuch as it cannot well be imagined that any Gentleman's Seat should be destitute of a small Piece of Ground sufficiently well shelter'd from Winds, either by Trees, or Buldings, or both, if it be chosen discreetly for that Purpose.

(2.) Another Benefit in this Scheme will be; That you will have a Fruit-Garden exactly to your Mind, neither too little nor too big, and exactly right as to its proper Situation and Exposition to the Sun, in all respects answering the Purpose of a profitable Fruit-Garden, to be managed according to Art, with Trees, both Wall and Dwarf, set at their proper distances.

(3.) Here will be an Opportunity given for the building new Walls with *Horizontal Shelters*, which (as I shall shew presently) are attended with incredible

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credible Advantages, both for the securing the Fruit in the Blossom from Frosts and Blasts in the Spring, and for accelerating its ripening afterwards.

(*Lastly.*) Another very considerable Advantage still in the Choice of a new Garden, is, that there will be an untry'd Soil to work upon, which will infallibly produce vigorous healthful Trees, if it be rightly managed and chosen, and the Trees themselves afford early, large, and beautiful Fruit, if they be pruned and ordered as they ought. To all which I need not add, that by Means of such a little retired Garden, you will have the Fruits of your Care and Charge secured to you from all Comers and Goers, which in a large and spacious Garden of Pleasure is found to be a Matter of some Difficulty.

But before I leave this first general Cause of Barrenness in a Fruit-Garden, *viz.* lying too much exposed,

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fed, I cannot but here take Occasion to add, by way of Remedy and Cure; That there is commonly a very great Mistake committed in building Garden Walls too high, even to the Height of 14 and 16 Feet. Which hath these two great Evils attending it, besides the unnecessary Charge of it; it subjects the upper Part of the Trees to the blasting Winds; and it tempts the Gardener to run up the Branches of the Trees direct and perpendicular, in order to cover the Wall as soon as may be. This Method indeed will soon cover the Wall with Wood; but as it is contrary to the Rules of Art, there will soon plainly be discerned a Defect and Want of Blossoms and Fruit in the Middle Part of the Tree, which will be more visible in the Pear than in any other sort of Tree. But this being not the proper Place to rectify this Mistake in Pruning, what I am here to observe and take notice of at present is only this.

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this; That nothing but a manifest
Want of Room can excuse or justify
the building Garden Walls too high,
when it is plain there is a certain
Charge for a very uncertain and
doubtful Profit. I have always thought
that Eight or Nine Feet high is sufficient
to answer the Purpose of the most vigo-
rous Tree, provided it have but El-
bow-room enough; and I suppose too
that that Height will be thought a
sufficient Guard against * foreign In-
vaders of Property; if at the same
time you will but make this general
Exception, That nothing is ordina-
rily strong enough, not even the

* It may not be amiss here to relate, That at my first
coming to my Parish, I found some difficulty to pre-
serve my Fruit from Robbers: Hereupon I resolved up-
on this Stratagem. I ordered the Smith to make a large
Iron Trap with formidable Teeth to close one within
another, which was to be called a *Man-Trap*. This was
hung up several Weeks at the Smith's Shop *in terrorem*,
giving it out, that now there would be great danger, if
any one should attempt to rob my Garden. This, with-
out setting the Trap, succeeded according to my Wish,
and I have not been since robb'd these 12 Years. *Note*,
Restrain'd, I hope too, not altogether by Terror but
from better Principles.

Grace

GARDENING, Improv'd. IS
Grace of God, to stop and conquer
the Perverseness of Man's Will and
his wicked Inclinations.

**The Second General CAUSE of
BARRENNESS.**

HAVING under the foregoing
Head pointed at one great and
manifest Cause of Unfruitfulness in
many Gardens, and directed, as I
hope, a sufficient and proper Remedy,
I shall now assign a second general
Reason for the same Defect, and
I hope also I shall be able to apply an
easy and effectual Cure. The Reason
that I would here assign for Barrenness,
is, the having too much Walling and
too many Trees. This may look at first
Sight like a strange Paradox; That
because a Gentleman has great Variety
of Walling and Abundance of good
Trees, that *therefore* he should have
but little Fruit. But as strange as this
may seem, Experience

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perence will justify the Truth of it, and I doubt not at all but to make it appear, there are good Reasons to be assigned, why it must, generally speaking, have that Effect.

For let it but be well considered what little Care is taken in a very large Garden, that every Tree have its due and proper Pruning, and we shall not wonder if they do not bear their proper Quantity of Fruit; nay, frequently that they bear little else but Leaves. The Grass and Gravel Walks shall not want their seasonable Mowing and Rolling: The several sorts of Ever-Greens shall not want their due Clippings to preserve their Beauty and Figure. The several sorts of Flowers are planted in their proper Earths, and removed at their proper Seasons, to give them all the Variety of Colours to please the Eye; All these Parts of a Garden are respected with, as it were, a religious Care, and complemented with their timely

GARDENING; *Improv'd.* 17

timely Dressings and Culture, to give only an entertaining Prospect and pleasant View. And excepting the Case of some sweet-scented Flowers and Shrubs, there is but one Sense gratified with the Expence of nine Parts in ten of a fine Garden. For alas, after the Attendance that is given these things I have been speaking of, what a little Portion of Time and Labour will be afforded the Fruit-Trees against the Wall, or the Dwarfs wherever they are? If the Wall-Trees can but be perswaded to be brought within the Compass of a *Semicircle*, and the Dwarfs made a little *Concave*, all is generally thought to be well enough, without any great Regard had to what is proper to be chosen, and what to be refused; much more, without any Care to put the Tree into a bearing State for another Year. Nay, it is but too commonly seen, that even the best sorts of French Pears against the best Walls in some Gardens, shall have

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no other sort of pruning, than what a good pair of *Sheers* affords them; whilst it may be the Gardener would blush to have a *Weed* found in his Borders. I confess this sort of unequal Management sometimes raises Indignation in me, and I cannot here forbear to expostulate the Case a little with such who are nicely careful to maintain Beauty and Regularity in all other Parts of the Garden, wherein they are to be commended; but will not be persuaded to allot a due Proportion of Care and Labour to the noblest and most profitable Part.

For let us here but reflect a little, and resolve (as we ought) to proportion our Value and Esteem to the intrinsic Worth of Things, as they more or less serve to entertain the Senses, and answer the innocent Appetites of human Nature. Do the several Colours in Flowers serve to strike the Eye with their Variety and Beau-

GARDENING, *Improv'd.* 19

ty, and thereby form pleasing Ideas in the Imagination and Fancy? What less than all this can we think the several Fruit-Trees, cloathed with their different colour'd Blossoms, will do? If they be managed with Art, what a pleasing Entertainment is it to the Eye, to behold the Apricot in its full Blossom, white as Snow, and at the same time the Peach with its Crimson-colour'd Blooms, *both* beginning to be interspersed with green Leaves? These are succeeded by the Pear, the Cherry and the Plum, whose Blossoms and Leaves make a very beautiful Mixture in the Spring; and it cannot be a less pleasant Sight to see Clusters of swelling Fruit all the Summer, as the Earnest of the full Gratification of another Sense in Autumn. And now we are come hither, what Painter can draw a Landskip more charming and beautiful to the Eye, than an old *Newington* Peach-Tree laden with Fruit in *August*, when the

20 *The Pleasure and Profit of*

Sun has first begun to paint one side of the Fruit with such soft and tempting Colours? The Apricot, the Pear, the Cherry and Plum, when they appear in Plenty as they ought, present themselves to the Eye at the time of ripening in very inviting Blushes. In short, all the several sorts of Fruit-Trees have such pleasing Varieties, that were there no other Sense to be gratified but the *Sight*, they may vie with a Parterre even of the finest Flowers. But then when we come to consider, that all this Beauty rewards the careful Pruner with Plenty also of the most delicious *Fruit* to gratify the *Taste*, there can be no Comparison admitted, and no Excuse can be made for the least Want of Care, to assist Nature in her kind and generous Inclinations.

However it is the Observation of this *Want* of Care, and the manifest *Neglect* of the best and most profitable Part of a Garden, which has made
me

GARDENING, *Improv'd.* 21

me thus expostulate the Case, and with what View I have done it, may easily be perceived. For if, where there is much Walling, and Fruit-Trees abound in great Plenty, there is yet so unequal a Portion of Time and Art allotted for their Management, a necessary Consequence of that must be *Barrenness*, which is the Disease I am inquiring into. Having therefore here in some measure discovered the Cause of it, we are now to seek out for a proper Remedy and Cure.

Now there are but two ways of curing this evil of Barrenness, proceeding from a too great Abundance of Trees: Either first to allow a proportionable Help and Assistance, for the due and careful Management of so many Trees; or else secondly to *reduce* the Fruit-Garden, and bring it into a much less Compass, that every Tree may be sure to have its proper seasonable pruning and nailing. But why I prefer

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this latter Method, much rather than the former, I shall give these following Reasons.

(1.) There is more Care and Attendance required for the due Management of a single Fruit-Tree, than is commonly thought on or expected. The Pear and the Vine especially, which require the best Walls, will not be put off with any *superficial* Pruning. The former must be frequently check'd, and even *maimed* in its most vigorous Parts, to hinder its luxuriant Growth; and the great Wood, especially in the middle, must be ever carefully rejected: And as for the Vine, *that* will not be satisfied with less than four several Prunings and Nailings within the Year. And shall I need to tell the vigilant Gardener, how much Business it is, to dispose according to Art the several tender Branches of a Peach or an Apricot? Now where there are great Numbers of such Trees in a Garden,

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as far as my Observation has gone, they are generally neglected, and put off with much less Care and Attendance than they require; the necessary Consequence whereof is *Barrenness*. To Cure which therefore, I should think it a much better way to lessen the Number of such Trees, to confine the best Fruit-Garden to a narrower Compass, than to allow a proportionable Help, and what will be thought an extravagant Charge, for the proper Government of so many Trees; especially if,

(2.) It be considered, that *that* may easily be shewn to be an *unnecessary* Charge and Trouble: Because, as will appear presently, the End and Purpose of having a sufficient Quantity of Fruit may be obtained in a *less* rather than in a *large* Garden; and consequently at a much easier and cheaper rate. I always take it for granted, that every one covets to have as much Fruit as he wants, with

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as little Charge, and in as small a Compass of Ground as may be; that is to say, in short, to have a great deal of good Fruit in a little room. If there are some who will not grant me this, I desire that what follows on this Head may go for nothing; but where it will be granted, I hope the following Reasons, Arguments and Calculations will be particularly considered, and I doubt not at all, but it will plainly appear, that many Gentlemen have hitherto been under great Mistakes, when they have enlarged their Gardens with that particular View and Expectation of having more Fruit.

To make this Matter then as clear and intelligible as I can, I have here annex'd two distinct Schemes or Plots, both furnished in such Order and with such Fruit-Trees, as are proper to their different Situations and Aspects to the Sun; whereby it will appear what Variety and what Quantity of good Fruit, may

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may with Reason and great Probability be expected from a little Spot of Ground, allotted solely and particularly for the Purpose of a Fruit-Garden. If it be here objected and wondered at, as I expect it will, that I should allot so little walling, and so small a Space of Ground, as only 40 Yards square to serve a plentiful Table with Variety of the best Fruit, I desire it may be particularly considered and examined, what probable Quantity of Fruit a Tree pruned and managed according to Art, may reasonably be supposed to bear; and then I am perswaded the Objection and Wonder will very much cease, if not wholly vanish.

Let us then begin with the Peach, which in a bearing Year, and when the Tree hath well-nigh covered the Wall, will ordinarily bear a hundred or more of large fair Fruit; and if the Tree be in a prosperous State, kept free from great Wood in the Middle, and hath the Advantage of
Hori-

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Horizontal Shelters (of which more presently) you need hardly ever fear having such a Quantity from every single Tree. But because that Number may be thought too great to be depended upon, let us take only half, and suppose every Peach-Tree to bear fifty fine large Peaches. An ample annual Reward for Care and Diligence! Now in both Schemes I have allotted Seven Peaches on the best Walls, the Product whereof at a moderate Computation, will be 350 of the best and largest Fruit, which ordinarily succeeding one another in their ripening, even on the same Tree, will afford a regular and daily Gratification to the Taste in this one Article of the Fruit-Garden: But lest even this Abundance should not be thought sufficient, more Peach-Trees may be set in the Room of the two Vines in the one Plot, and the Winter Bon Crétien and the La Chassere in the other; because there are other Places
may

GARDENING, *Improv'd.* 27

may be found for *them*, as I shall observe presently. And indeed I placed *them* there, rather with a View of their being removed, as Occasion might require, or as Sickness and Mortality in other Parts may make necessary for a present Supply of more Peaches.

Let us next consider the Apricot; which, whatsoever Monsieur *Quintene* is pleased to say of it, as if 'twas fit only for Compotes, is really a good and much valued Fruit in *England*. I mean not the early Masculine Apricot, which is indeed worth nothing; but the large Turkey Apricot, which hath a noble Flavour, and is a constant Bearer. If therefore in the one Plot I have allowed only *three*, because a *South-west* Wall is rather too good, and in the other *five*, as a sufficient Supply, it is not because I despise it, but because I know *five* such Trees will ordinarily bear an incredible Quantity of Fruit, if they
be

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be managed as they ought. I have now two Apricot-Trees, that have been several Years in their Prosperity and at full Growth, and I cannot say that in all that time I can remember a Year, when they have afforded me less than a Bushel of Fruit. And alas! my Soil and Situation will not give me leave to boast of any Security from Blasts, Canker, &c.

It will not sure be thought too great a Complement, that I allow Room on the best Walls for four or five of the best *French* Pears, which are so little inferior to any of the Stone Fruit, and yet come to their Maturity when the other are gone, which is no inconsiderable Recommendation. And on the other side, it ought not to be wondered at by those that admire them, that I allow so few; because with good Management each Pear-Tree will ordinarily bear no less than half a Bushel, as I have had long Experience; indeed not seldom

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as much more. However there is so ample a Provision made of excellent sorts among the Dwarfs, that there can never be found any Deficiency of good Pears in this Plan.

I have allowed Room for some of the best Plums on the *East, West, and South-West* Walls; because I think they very much deserve it, especially the two *Perdrigans* and the *Roch Corbon*. They will by no means do well *without* a pretty good Wall; but *with* that Assistance they are incomparable Fruits, and have a noble vinous Flavour, such as must be agreeable to every one that has not an Aversion to a Plum, or will not always think it a *peasantly* Fruit.

Upon the whole, here is a square Plat of Ground set out and walled round, supposed to be only 40 Yards square, which, at 4 Yards distance for every Tree, will afford 40 Trees, every several sort suitable to its several Aspect to the Sun; which, with
good

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good and skilful Management, may reasonably be supposed to afford every Year a sufficient Variety, as well as Quantity of the best Fruits; If we take in what I am going next to speak to, *viz.* that great additional Help of the Dwarfs in the middle.

Which Dwarfs I make to consist only of Three sorts of Fruit, as most proper for our present Scheme, *viz.* Pears, Plums and Cherries, leaving even the best Apples to their more proper Place in the Orchard: except the eight Non-Pareilles on Paradise Stocks, which may be observed to be set in the intermediate Spaces on the 4 sides, where, never growing above a Foot high, they will have room enough.

Now one side of the Square may be observed to contain no less than 28 Dwarf Pears: allowing every Tree four Yards square for its horizontal Branches to spread in, which is very sufficient, supposing the Place not to be
crouded

GARDENING, *Improv'd.* 31

crowded with any thing else; no not with Flowers or Legumes, which is what I always take for granted. If then every single Tree doth but in any sort answer the Proportion of Fruit, which my own Experience hath furnished me withal, here will be greater Plenty and Abundance than can well be disposed of. I have only one Dwarf of the Swan's Egg Pear, which is indeed (as I have termed it) a *Nulli Secundum*, and, if my Memory fail not, hath for these last five or six Years afforded me no less than two Bushels; Nay, this last Year I had betwixt three and four Bushels from it, most of them excellently good. However, because this may seem something extravagant, and more than can ordinarily be expected, let us suppose every Dwarf-Pear to afford only half a Bushel a-piece one with another, the Product of Twenty eight Trees, on one side of the Square only, will be Fourteen Bushels of the best Summer and Autumn Pears of five or six sorts.

The

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The other side of the Square is filled with the best Plums and Cherries, at least the best of those sorts, that will do without the Help of a Wall, also in Number; which, with tolerable Management, and a reasonable Allowance for Quantity, will make an abundant Provision for the Table, throughout the whole Season of Cherries and Plums. Only it may not be amiss here to observe, that it will be very proper to suffer the one half of the Dwarf-Trees to grow higher than Ordinary: That is to say, all those several Trees in both Squares, that are planted nearest to the North, North-East, and North-West Walls, may be suffered to be what we call *Half Dwarfs*, where their taller Heads will not do any harm by overshadowing any of the best Walls. And indeed the *Half Dwarfs*, where they can be suffered, are the most constant Bearers with the least Trouble and greatest Plenty; the

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the other requiring a very vigilant Eye to correct Luxuriancy, and seasonably to remove all perpendicular and useless Branches. This indeed must be done in the Half Dwarfs, as well as the other; but the Confusion that a vigorous Tree makes is much greater in the low Dwarfs, and so the proper Remedies must be oftener apply'd. Besides, I have observed, that none of the sorts of Plums and Cherries especially, will well endure *violent Corrections*: *Unmerciful Loppings* is a sort of *Persecution* to them; and they answer the End of their Nature much better under a *moderate* and *gentle* Government.

By this time I suppose it will be thought by many, that I have forgot two or three considerable Articles in a Fruit-Garden, and have made no Provision for them in the present Scheme, *viz.* Vines, French Winter-Pears, and Figs: But indeed *these* I have with Design left out of the Plan, and refer-

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ved them for more proper and convenient Places. All the Southern Aspects of the Dwelling-House, Stables, and other Out-Houses, which every Gentleman's Seat is plentifully furnished with, will do singularly well for these. For all the several sorts of Bon Crêtiens, the Summer, Autumn and Winter, &c. require more than ordinary Height and Room to spread in; and here they may be allowed *Elbow room* and *Height* enough to answer the End of bearing *much* Fruit; tho' if the Soil be any thing inclinable to too much wet or a cold Clay, it must not be expected to be *good* Fruit: And therefore in such Cases, it is adviseable, rather to be contented with such as will do well enough; as the Winter-Thorne, Amador, Virgulee, or La Chassere; which are excellent in their Kind. However, I ought to say here that if the Soil be warm and suitable to the several Bon Crêtiens; yet they produce

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produce much better and larger Fruit on a Quince than on a Free Stock; which perhaps is peculiar to this sort of Pear: tho' it must not be expected such Trees should be very long-lived.

The several sorts of Grapes are also reserved and allotted for the Southern Aspects of Buildings near the House, where they may have room to spread themselves, and will soon cover such Walls with Plenty of Fruit. Not that the Vine doth really need (as is commonly thought) any such great Height to make it produce Fruit; but that it will *sooner* and *better* cover such *tall* Walls as are a natural Security of the Fruit against *ordinary* Endeavours to taste it.

As for Figs in the last Place, which I have reserved for Walls that lie open to Comers and Goers, they will do singularly well there. For tho' both the blue and the white sort are the richest and noblest Fruit a Garden

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affords, yet it seldom strikes the Fancy or suits the Palate of the meaner sort; insomuch that there is little danger of being deprived of this Delicacy by any rapacious Hand. And indeed it is for this reason also, that I advise the planting the best of the Winter-Pears in such exposed Places; because whilst they are growing on the Tree, they are in no great danger of being tasted a second time.

Thus I conceive we have effectually found what we were in Quest of, *Multum in Parvo*; which I always suppose to be a very acceptable Thing; to such wise Men especially, as have learn'd the *Divine Art* of dedicating the Overplus of their Time and Estate to God.

What some Modern Authors mean by putting Gentlemen upon Grand Designs, and villifying all others as *crimping, diminutive, and wretched Performances*, I could never understand. I believe it will be found that
nothing

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nothing hath more tended to the Ru-
ing of brave Estates, than these *proluted*
Gardens, as they call them, and a fond
Affectation of imitating a vain People
in what they call *La Grand Manier*.
Our English Gentlemen have always
been famous for more substantial Rea-
lities, without separating the *Jucundum*
from the *Utile*; and can relish a profi-
table Design, tho' it doth not resem-
ble *Ingentia Rura*. If Gardens are on-
ly to be valued for their largeness, there
will be no end of multiplying the
Number of Acres, till Gentlemen
have got to the End of their Estates:
So that I cannot but think, there must
be great Defect in the Contrivance, if
a very beautiful and magnificent Gar-
den of Pleasure and Profit too, be not
formed out of a very few Acres. I am
pleased however to think *Horace's*
Wish agrees so well with my present
Scheme,

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*Hoc erat in Votis; Modus agri non
ita magnus
Hortus ubi,-----*

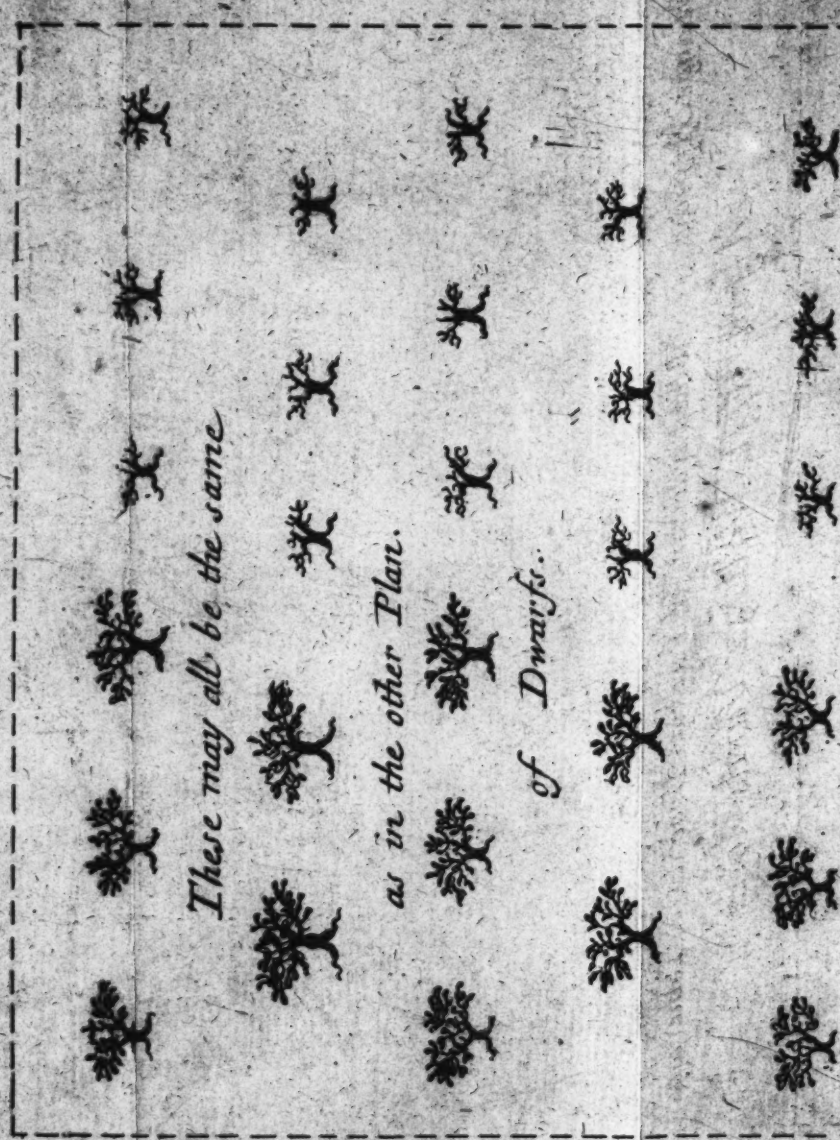
and that I have reduced the Fruit-Garden to less than half an Acre, sufficient to furnish any Gentleman's Table with all the Variety of good Fruits in their several Seasons. This ought to be the more acceptable, in that it is proposed as a Remedy to cure Barrenness proceeding from too great a Compass of Ground and too many Trees; which, as far as my Observation has gone, do generally serve to enhance the Charge and lessen the Profit. For what an entertaining and comfortable Visit may we suppose a Gentleman every Day to make to this little Garden; where he will find himself encompassed and surrounded with Plenty, and may behold a charming Variety of what is most pleasing to the Eye and Taste, at once the
Reward

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Colmar. Wint B: Crétien. Buree. La Chassere. Old Newingt^r A
A Direct So

Red Bon: magnū Roch Corbon. Queen Mother. Rysselet. Cuisse Madam. Buree. 2 Aprelots.
A full East Wall 32 Yards long.

2 Round pears. 1 Damascene 2 black Worcester



These may all be the same

as in the other Plan.

of Dwarfs.

3 Orange Apricots. Blue Ferdinan W Ferrary: Drue & Co. Leavenworth, Kansas.

A full West Wall 32 Yards long.

These all the same as in

the
other Plan.

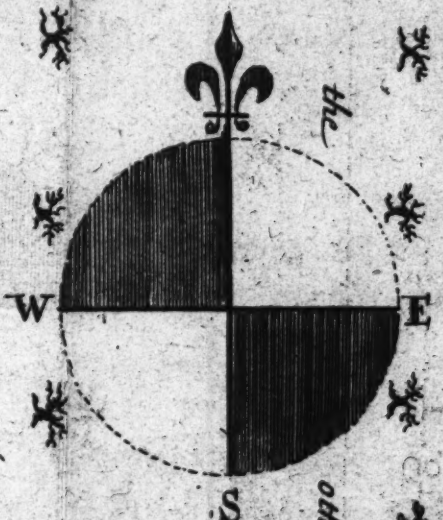


Fig. 1.

3 Morella Cherys. 2 Muske phums. two White Bonum

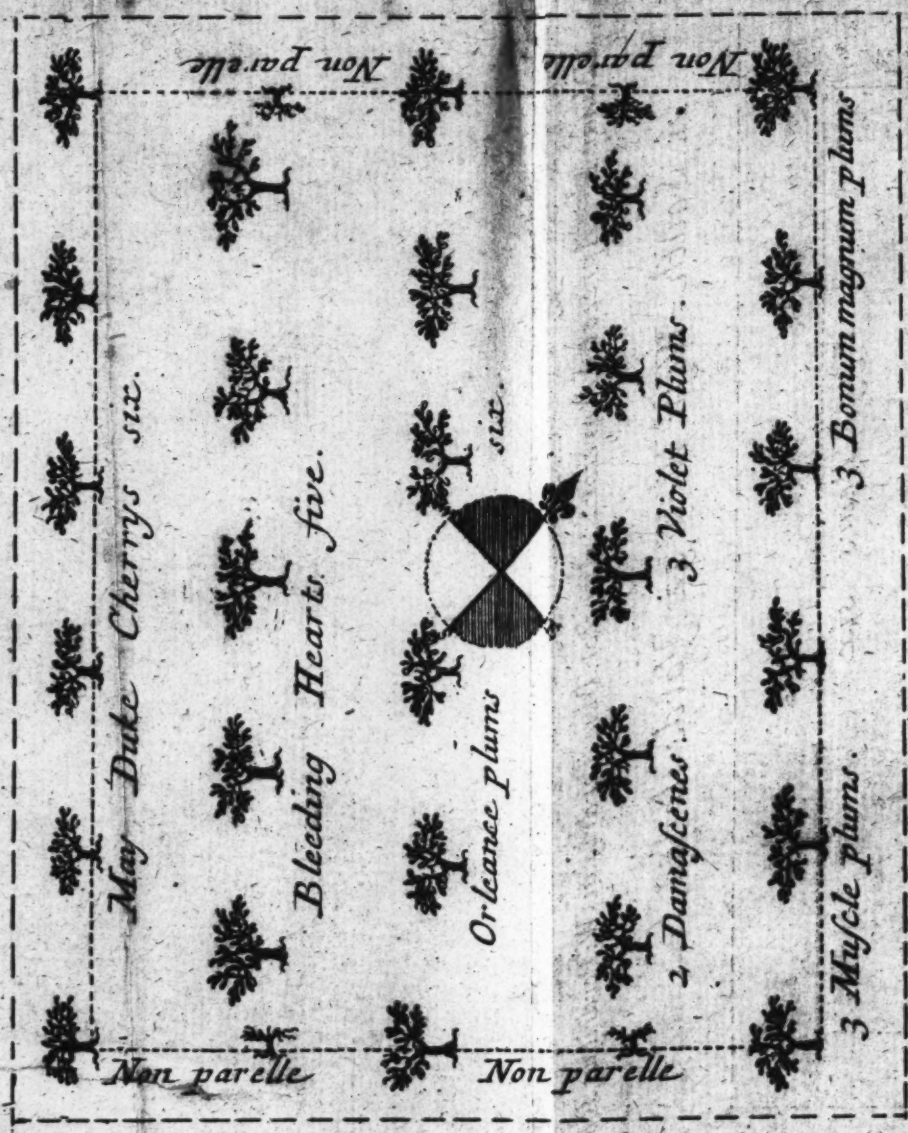


Burce. Verte longue. St Germain Amb. O. Newington Peaches. 2.
 A South-East Wall



2 Orleans plums. Muscle. Red bonu Magnu. 2 White bonu mag. 2 May duke Cherrys.

A North-East Wall 32 Yards long

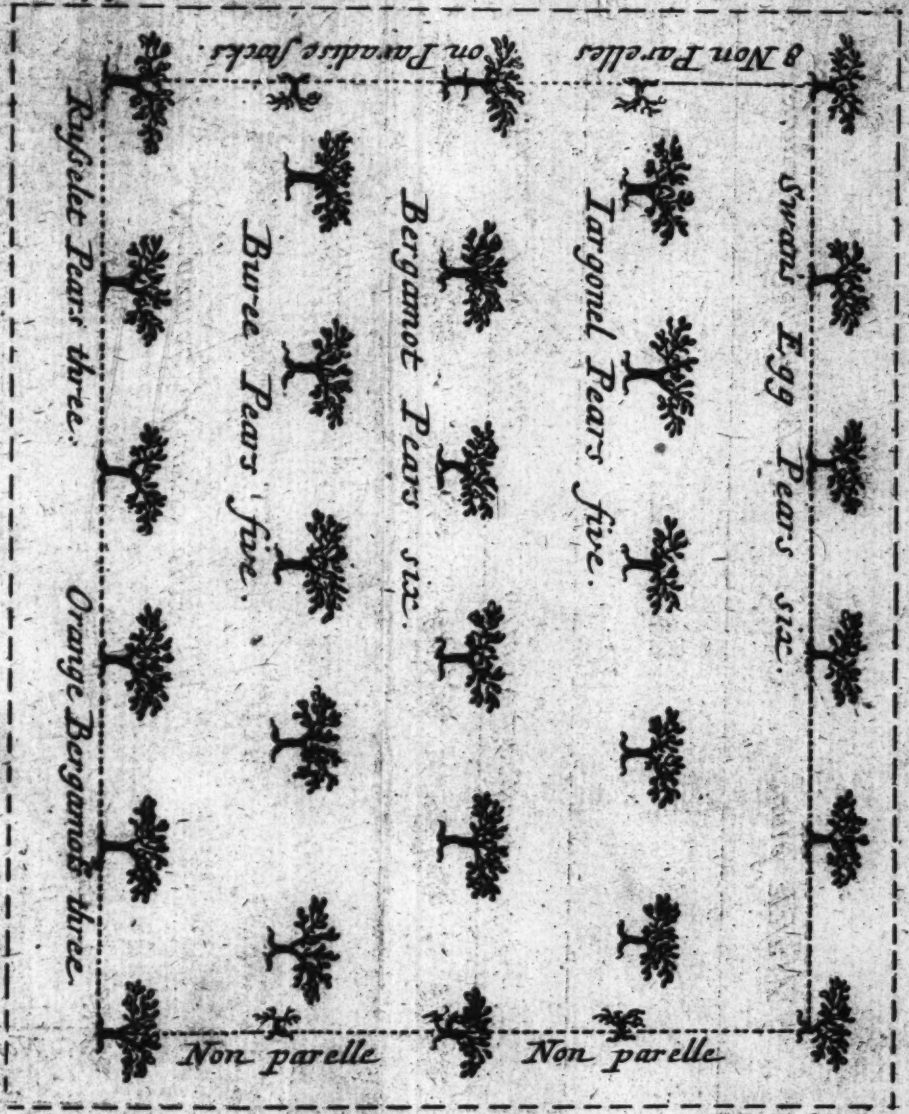


Plums. 1 Pound pear. 1 Russet 2 Fotheringha plums. 8 Yards long

his. 2. Roman Nectarines 2. Minion P. Admirable. Vine. Red Magdalen
or peach
Wall 48 yards long

Vine. Colmar P' Apricot. Apricot. Apricot. Blue Perdigian. W. Perdigian. Red Corbon
or peach

A South = West Wall 32 Yards long



2. St I

Six Morella Cherries. two Queen Mother. Plum
A North = West Wall 48



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Reward of his Care and Diligence, and the Fruit even of his Recreation.

I suppose I need not add any thing farther on this Head, the two different Plans I have hereto annex'd, the one exactly according to, the other crossing the Quarters, will make every thing easy and plain *. And the Moral of the whole I should think is not less plain. For if our innocent *Recreations* are thus surprizingly rewarded with Pleasure and Profit, how can an ingenuous Mind forbear thankfully to adore the God of Nature for temporal Blessings, and more chearfully to expect a greater Reward in the next World for such *Virtues*, as lay a Foundation for it in this?

* *Fig. 1. and Fig. 2.*



A Third General CAUSE of
BARRENNESS,

IS an unskilful Ordering and bad Management of Fruit-Trees, both in their *Planting* and *Pruning*. The Case is much the same here in the *vegetable* as it is in the *moral* World. Every one knows how fatally Youth is commonly enslaved to bad Courses, for want of setting out right at first, and being well instructed and seasoned with virtuous Principles. Corrupt Nature will soon over-bear the *weak* and *tender* Dispositions to Goodness in Youth, without an early Care and wise Government: By the Help whereof head-strong Passions are subdued, and all the wild Sallies of a vicious Inclination are kept within due Bounds? And so by the Blessing of God, the Man thereby becomes fruitful in good Works, and useful in his Generation.

So

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So also here in the *vegetable* World: it is of great Consequence to the Goodness and Prosperity of a Fruit-Tree, that it be rightly managed and kept in due Order from the beginning; that the extravagant Growth of Nature, and its Tendency to Wood and *fruitless* Branches, may be kept under and subdued in time, before it become too head-strong and ungovernable: by which means the *weak* and *tender* Shoots will begin more and more to discover themselves, as the joyful Appearances of Fruit and Plenty. An Error and Mistake in the beginning proves often fatal, and is not so easily rectified afterward, without great and too dangerous Violences. But let us examine this Matter a little more particularly, that we may the better know how to apply the proper Remedy.

As one Cause of Barrenness, I have here taken Notice of a common Defect in the Management of Fruit-Trees;

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Trees; both in *planting* and *pruning* them. To speak a little methodically,

First, A wrong Method of *planting* is a very untoward Beginning, and proves oftentimes of very ill Consequence, with respect to future Hopes of any great Plenty. And yet there are these three several ways of *planting* too often practised, which seem to me to be contrary to the Rules of Art, as well as Nature; *viz.* Planting Trees too deep; too near one another; and against a wrong Exposition.

(1.) There is no one Mistake in the Art of Gardening, that I have observed to be more general and common than this, of planting Fruit-Trees too deep in the Ground; and yet nothing is more fatal to them, especially in some Grounds too much subject to Moisture in the Winter, and nothing tends more to keep Trees in a sickly, unthriving Condition, and consequently from bearing either much or
good

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good Fruit. Indeed where the Soil is naturally exceeding dry, and lies on a Declivity that will quickly carry off the Winter-Wets, the Fault may be less dangerous: But except there be a sufficient Depth of natural good Earth above the Rock or Gravel, the Evil complained of will there quickly discover itself, after four or five Years, when the Roots of the Tree will be starved by a hungry Gravel, Sand, Chalk, or Rock, or whatsoever the Bottom be, that lies too near the Surface. On all Accounts therefore it is much the better and safer way to plant *high*, provided Care be but taken the first and second Year, to keep the Roots tolerably cool and moist; for which I have already given Directions in my former Treatise *. To which and what I have there said about Planting, I shall only add here on this Head: That because I am

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well assured, nothing is more fatal to Fruit-Trees, the tenderer sort especially, than planting them too deep, and thereby subjecting their Roots to too much Wet in the Winter; (for Summer-Wets never hurt them) I cannot but advise to let the top Surface of the Borders under the Walls be at least seven or eight Inches above the common Level; setting that part of the Tree, where it begins to root and divide its Spurs, exactly even with the upper Surface of the Border. Only still it must be observed (as I have elsewhere directed*) that there must be added another Semicircle of good Earth or rich Sand of about three or four Inches deep round the Tree, paved with small Pebbles, to keep it cool and moist for the two first Years. If this Method is carefully put in practice, there will be no need of mending the borders above one Foot deep;

* Pag. 15. former Treatise,

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no matter how wide, to encourage the Roots to spread horizontally. I cannot but here repeat, and earnestly recommend the making use of the best *untry'd Earth* that can be got, for filling up the Trenches, both for Wall-Trees and Dwarfs; having had long Experience that no sort of Composition made with Cost and Art, can exceed the Riches of this Earth, or will make more vigorous, healthful and lasting Trees*. But,

(2.) There is another common Mistake committed in planting, which is attended with very unhappy Consequences, and that is planting the Trees too near one another; the Mischief whereof is very manifest these two ways: First, after 5 or 6 Years, they begin to crowd and shoulder one another, and for want of room the Gardener is tempted to run the Branches perpendicularly, which is the

* See more of this *Fag. 5. Part 1.*

high

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high Road to Ruin; at least it is the way to increase the Wood, and lessen the Quantity of Fruit; for the bottom and middle Part of the Tree will quickly be found to be altogether barren; and in the Peach and Apricot the Evil will be absolutely irrecoverable; *they* not putting out young Shoots, when the great Wood is cut out, by reason of the Thickness of their Bark. Whereas when Trees are kept thin of Wood in the middle, and have room to spread their horizontal Branches, every Part of a Tree may with Care be kept in a bearing State. But besides, there is another Mischief attends this Mistake of planting too near; which is, that the Roots of the Trees will quickly meet, and so rob one another of the proper Nourishment they should receive, and when once the Borders begin to be worn out, and lose their Richness and Fertility, *that* is never to be recovered, but by taking away the Tree, putting
in

GARDENING, *Improv'd.* 47

in new Earth, and planting another. Whereas when Trees are planted at their due Distances, their Roots do still receive new Succour and fresh Nourishment, as they advance, and as the Head of the Tree increaseth to require it; whereby an agreeable Health and Vigour is retained a long time even for 20 or 30 Years. Now, though Pears may ordinarily require something more, especially if they be upon free Stocks; yet I have assigned only four Yards, as a mean distance proper only for Fruit-Trees, either for the Wall or Dwarfs. *More* Room would generally leave too great Vacancies in the Wall, and *less* would subject the Trees to the Evil here complained of. In my former * *Treatise* I have indeed recommended the planting tall Trees in the intermediate Spaces: But this I suppose to be done with great Discretion, chiefly

* *Pag.* 16.

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betwixt Pears whose Strength and Vigour are not so easily impaired; or if they are placed between other Trees, they are supposed to stand only 2 or 3 Years at most, and then to be removed into the Orchard for Standards.

For the very same Reason that I disallow of Trees standing too near together, that the Riches of the Borders be not wore out, I also by no means approve of a bad Practice in some Gardens, of letting Rosemary, Lavender, Stock-Gilliflowers and Iris's, &c. grow on the Borders, where the choicest Fruit-Trees are, which yet in a little time will not fail to impoverish the Ground, and give the Trees, if they be young, occasion to *complain*, by making only weak and languishing Shoots. But then again,

Lastly, There is yet another great Mistake, that I find very frequently committed in the planting a Fruit-Garden;

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Garden; and that is, putting Trees on a wrong Exposition, which must be owing to Ignorance, either of the Nature and Quality of the Tree, or of the true Disposition of the Ground and its exact bearing to the Sun. The Ignorance of either one or t'other, or both, must needs be of bad Consequence, and prove a great Disappointment to the Planter; who it may be for want of being rightly informed, has put a Vine, an Apricot, or a Peach on a *North-East*, or a *North-West* Wall, and it may be has been so unfortunate, as to put a meally Summer Pear, or an indifferent Plum against a *South-East* or a *South-West* Wall. This is no airy Supposition; for I have very often my self found it so, and complained of it with some Uneasiness. It is a very common Practice with some to thrust many of the best sorts of French Pears, the Buree, the Verte-longue, the Virgulee into any Corner of a *North-East*

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or *North-West* Wall ; or if the Wall faces any Point of the *South*, it shall be shaded by some neighbouring Wall or Building for ; or 4 Hours ; inso-much that if the Trees do bear any Fruit, it will prove small, wat'ry and insipid ; the general Consequence of which is, that the sort of Fruit shall be exclaimed against and condemned, without having had proper Justice done to it.

Indeed it is not seldom that Apricots and Peaches and Vines are *supposed* to be set against *East* and *West* Walls ; when upon Examination the Exposition is found to bear several Degrees towards the *North* : In which Case the Disappointment must be very great, when after several Years waiting, the Trees are found to bear little else but Leaves, or small insipid Fruit ? For indeed no other can well be expected from such an Exposition, as declines any thing to the *North* ; except in a more than ordinary hot Summer

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Summer and Soil, or with the Help and Advantage of some artificial Heat, as the back of a Kitchen Chimney, or the like.

To prevent therefore the Inconvenience of this Mistake, it is very advisable when a Fruit Garden is once pitch'd upon, and the Walls built, to know by an exact Meridian Line, the proper Bearings of each Wall, before they are Planted; and their true Declinations. Now tho' there are several easy ways of doing this, yet because every Gentleman may not happen to be acquainted with them, and to make this Treatise as useful to the Publick as I can, I have inserted the following short and easy Method of finding an exact Meridian Line.

Take a Stone of about 18 or 20 Inches square made exactly plain and smooth. Bore a hole near one of the Corners, wherein fix an Iron Pin about 14 Inches long *clear*, drawn to a Point on the top: No matter whe-

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ther it be exactly perpendicular. Place this Stone in some open Part of the Garden exactly horizontal by a Level, that Corner where the Pin stands and its Opposite bearing as near as you can guess, *North* and *South*, the Pin on the *South*. This done, about 9 a Clock in a clear Day, draw a Semicircle from the extreme Point of the Shadow of the Pin, which may be done with a steady Hand by the help of a narrow thin piece of Fir, made sharp at one end with the Point of a Nail, fixing the flat side on the top of the Pin; so that the Point of the Nail may just reach the extreme Part of the Shadow, where you are to make a Point or Mark. Then at about 3 a Clock the same Day, observe exactly when the Shadow of the Pin comes again to the Semicircle; from which Moment allow one Minute for the Sun's annual Motion, and then make a Mark exactly at the Extremity of the Shadow, which will be

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be something beyond the Semicircle. Draw a Line strait from one Point to the other, and then *half* it exactly; and from this middle Point raise a Perpendicular which will be the exact Meridian Line.

N. B. It is convenient to make 3 or 4 of these Semicircles both before and after 9 a Clock, for fear the Sun prove in a Cloud, when the Observation is to be made in the Afternoon; and then if one miss, the other may hit. Only great Care must be taken that the corresponding Points in the *same* Circle be made use of, that there be no Mistake. It is also proper to do this in the Summer Quarter, when the Pen-Umbra of the Shadow's Point is least, and the *exact* Point may be best taken and more nicely observed.

N. B. This exact Meridian may with ease be transferred to any other more convenient Place about the House; as the upright Stanchel of a Window or any perpendicular

E 3 Transome

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Transome or Jaume, shadowing on the Floor or Window Board; this Meridian being of singular use throughout the whole Year for regulating Clocks and Dials, and taking Declinations. Which last Operation being to our present purpose, may be very readily performed by only applying the side of the Quadrant to the Wall, and then holding up a Plum-Line exactly at 12, whose Shadow may pass thro' the Centre, and will at the same time give the Degrees of Declination on the Rim of the Quadrant; only a Western Declination must be counted *forwards* from left-Hand to right, and an Eastern *backwards* from right-Hand to left, on the Edge of the Quadrant, as the ingenious Inquirer will soon observe,

As to the Mistake of planting Trees on a wrong Exposition for want of knowing the proper Aspect every Tree requires; to remedy this I was once thinking to insert a Catalogue of all the
the

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the most known Fruits, with their suitable Aspects over against them, as also which are properest for Walls, and which for Dwarfs; but that I consider'd I have already effectually done this in the very Plan I have given above *; where at one View may be seen what I have judg'd proper for that very Purpose with respect to all the best and most approv'd sorts of Fruit; and the kind Reader will, I know, excuse me from all needless Repetitions.

Secondly, I come now according to my Method, to take Notice of some common Mistakes in the *pruning* of Fruit-Trees, which I suppose to be a great Cause of their Barrenness. But before I enter upon this difficult Point, I must be forced to say something to rectify a common Mistake, even in one of the first Things a Gardener takes in hand, and that is his *Pruning*

* Fig. 1. and 2.

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Knife; the true Make and Shape whereof I venture to affirm, with due Respect to the Judgment of preceding Ages, hath hitherto been quite mistaken. For the Blade of a common pruning Knife is known to be shaped and fashioned like a Hawk's Bill; and yet according to the Observations I have made of the real use of a pruning Knife, this is quite wrong and unnatural. If indeed the Branches of a Fruit-Tree against a Wall grew generally *downwards*, this kind of Shape might be of some use for the cutting off some of the stronger Branches; but as they generally grow *upwards* and *side-ways*, such a shaped Knife becomes almost of no use; at least it must be used very awkwardly.

Besides, in all Cases that require much Strength, a Mallet and Chisel are without Comparison best, safest, and most exact; and in other Cases also too stubborn for the Knife alone, a stroke of the Hammer on the back of

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of my Knife answers the Purpose to great Nicety and Exactness. But the most general Use of a Knife, is to shorten all the lesser Branches that grow upwards and sideways; to perform which, a Hawk's Bill is the most awkward Shape in the World: And therefore the Shape of the Knife which I always use and recommend to my Friends, is just the Reverse of *that*, a little sloping off, and round towards the Point: And how much more natural and useful such a shaped Knife is like to prove to one that uses it on upright and horizontal Branches, and *that* generally above Head, I leave to the Judgment of the ingenious Practitioner; only giving him here the Figure of both, the better to direct his Choice.



An irregular Tree neglected.



The same irregular Tree reduced in Time.

But

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But it may not be amiss to add here that such a Knife ought to be made with a good thick Back, the better to bear the Stroke of a Hammer upon occasion, and if possible of Razor-Mettal well tempered, that it may always have a good Edge, and be used as a Penknife, as well as for Pruning.

Having now settled this Point, the first Mistake in Pruning that I observe is, letting a Tree from the beginning run out into vigorous Wood and Branches all on one side; and because the Shoots on the other side are weak and unthriving by reason of Blast or Canker, the other are wont to be continued, and the Trees suffered to grow in a very irregular and unhandsome Fashion; whereby it comes to pass, that a great Part of the Wall is unfurnished with Branches, and by a continued Neglect, the proper Beauty and desired Fruitfulness is not capable

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pable of being restored, but by planting a new Tree. Whereas had this Evil been observed and remedied in time, *all* might easily have been reduced into the greatest Beauty and Order imaginable; as may be seen by the two foregoing Figures. For when Branches are young and tender, they are *ductile* and *governable*, and you may with Care *lead* them backwards and forwards, as Occasion and Necessity require. Neither is this Method any the least Blemish or Hindrance to the future Prosperity and Fruitfulness of the Tree, but rather a Furtherance by reason of that early Check it received in its most vigorous Part, which (as I have elsewhere observed) throws it sooner into a bearing State. And it is also to be observed, that such a Check does not in the least hinder its Prosperity: For there is this difference between a weak sickly Branch, and a vigorous Branch
made

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made weaker, rectified and subdued by Art: The one is in a dangerous dying Condition, for want of proper Wood and Pores to convey the Sap and Juices in their continued Circulation *; the other has its Ducts and Passages only a little straitened, by being horizontally bent and bow'd down; lest it spend its Vigour all at once, and die the sooner afterwards. In short, the one is dying and generally past Recovery; the other would

* What I have said in my former Treatise (Pag. 64.) amounts to a plain Demonstration of the Circulation of the Sap in the Jessamine, tinged all over by Inoculation. For tho' (as hath been objected) that Operation hath not the same Effect in the painted Philerea and Holley; and tho' we could not account for the Reason of such a different Phænomenon; yet still the Proof is undeniable in the Jessamine. But indeed the true Reason of that Difference seems to be plainly this; The Bark and Leaves of those Ever-Greens are so tough, hard and stubborn, that they do not easily suffer any adventitious Juice to alter their natural Colour; and we find some sorts of them will hardly retain the Stripe, made even from the Shoots of the Bud itself. Whereas the Jessamine hath a marvellous thin Bark and silky Leaves, which easily receive an Impression and Change of Colour from a ring'd or poison'd Sap, continually circulating through their Veins or Pores.

live

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live too fast, if not kept within due Bounds and wholesome Rules, which give true Life to the *vegetable*, as well as the *moral* World. This Reduction of a young Tree, which I am speaking of, chiefly respects the Peach and Apricot; no other Tree that I know of being so subject to decay by Blast and Canker on one side and not on the other. And now I have mention'd *them*, before I leave them, I shall take notice of a Defect in Pruning, more peculiarly prejudicial to these, than to any other sorts of Fruit-Trees; and that is, leaving the Wood-branches of the foregoing Year too long. This, tho' it is a general Fault in Pruning; yet it is of worse Consequence in the Peach and Apricot, their Bark, after two or three Years, growing so thick and tough, that they will not put forth new and tender Shoots any more after they are shortened, as the Pear and Plumb will do; which is the true Reason of
that

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that Barrenness so frequently visible in Peach-Trees toward the bottom, having been suffer'd to grow too fast, and run into long Wood-branches in their Youth. I am sensible several Persons are very regardless of this; especially such as are blessed with a more than ordinary warm good Soil; and are apt to triumph with their Plenty, without minding the strict Rules of Art, or, it may be, attribute their Success to their own particular Skill. Whereas Nature itself, with little Art in such Soils, will do Wonders for a time: But then they must remember, that their Trees will be shorter-liv'd: And accordingly in such Cases, as I have observed, great Barrenness in time will be discovered in the middle and bottom of the Walls, as a Fore-runner of Death. It is a certain Truth, *good pruning* not only procures *Fruit*, but makes *lasting Trees*.

Having

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Having given this Caution, I need not add any thing farther concerning Rules for the Government of the Peach and Apricot, if what I have already said in my former Treatise, be but well minded and considered. Only before I leave this Head, I have something particular to say with respect to the Government of the Pear and Plum, both those against the Wall and Dwarfs, which will in a great measure cure the Defect of bad pruning in old Trees, and prevent the Danger of Barrenness in young ones, arising from too great a Degree of Vigour, which these Trees are most subject to.

For *First* ; As to the Case of a young Tree, that discovers an extraordinary Vigour after planting, nothing so effectually brings it into a bearing State, as some way or other checking the Sap in its free Circulation, either in the Root or Branches. Now tho' I have sometimes practised
this

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this with Success on the Roots, by shortning several of them with a sharp Spade; yet because this working *under Ground* is a blind and uncertain Remedy, I rather prefer practising upon the Branches with my Knife; where I can see what I do, and make a Wound as little and as big as I please. In the Case therefore here supposed, I cut the most vigorous Shoots two parts in three through, with a pretty large Notch, lest it heal over again too soon, and recover an undesirable Vigour. Beside the Advantage of bringing a Tree sooner to a bearing State, there is this farther Benefit to be had by this Method, *viz.* you may lay all *untoward* Branches just as you please, humouring the Notch so, that the Branch may fall handsomely into the Place desired; so likewise all perpendicular Branches, and all such as grow forward, may, if occasion be, easily be reduced horizontally, and nailed close to the Wall in a void Place

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Place where they are wanted; and if it is a Dwarf, this *Incision* is of singular use to rectify *aspiring* Nature, to keep down all perpendicular Branches, and to give the Tree its exact open Air, and that proper Beauty and Form, which a Dwarf requires. There need not be much fear of making the Wound too big; for provided there be but any little reasonable Quantity of the outward Bark or Rind left uncut, a Branch of a *Pear* especially cannot ordinarily be killed, but will soon, *too soon* recover its Vigour. Only with respect to Dwarfs it must be observed, that where the Incision is made pretty large, and the Branch much weakened, it is very convenient to strengthen it for a time by a Prop, against the Violence of Winds; till the Wound is a little healed over, and it recover a sufficient Strength to support itself; which yet it will be observed to do in one Summer.

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Secondly, When the Pear and Plum have been suffered several Years to run into Wood and many thick perpendicular Branches, (the Effect of bad Pruning and the certain Cause of Barrenness) after some of the biggest Wood is entirely cut out, the best Remedy that I could ever yet find, is to make these *Incisions* with a Mallet and Chisel, on some of the largest and most upright Branches that are left; sometimes *two* or *more* even in the same Branch. This I have often experienced to produce Plenty, sometimes the first Year, but most commonly the second after the Operation. But indeed it is not always a Sign of bad Pruning, if vigorous Trees need such Checks as these; for the Pear on a free Stock is hardly to be kept within Bounds, or pruned with any constant Success *without* them: But *with* these Helps and a due Regard to the Rules of Pruning, which I have already laid down (Part I.) there is little danger of

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of wanting a Crop almost every Year; especially if what I have observed to be much wanted in these vigorous Trees, be but minded and practis'd: *viz.* never to let the Branches stand *too forward* with knotty Wood; but either to cut them quite off within half an Inch of the great Wood-branches, or else, as occasion serves, to *plash* them by *Incision*, as before, or rather *break* them with the Hand half through; by which means they become Fruit-bearing Wood, and you fill the Vacancies of the Wall, bending them as you please, from the Place where they were cut or broken.

I have frequently practis'd this with Success on the young Wood-branches, even of the Peach and Apricot, when they have happened to form themselves direct forward, or toward such Places where they were least wanted. And these Branches thus wounded have continued several Years bearing Fruit. But yet because

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they will often die with Gum, this must not be made a common Practice of, and ought only to be used in those Cases, where their dying is only the Loss of such Shoots, as would otherwise have been of no use. But the Pear and Plum are of so strong and hardy a Nature, that you cannot ordinarily hurt them by *Incision* or any moderate breaking of their Branches. I know not whether I need to add, that the Vine and Fig will by no means endure such course Treatment, the ingenious Observer well considering, that *Discipline* is always to be suited and proportioned to the *Strength* or *Weakness* of Nature.

N. B. Although this Operation of managing young vigorous Branches by *Breaking*, and the larger ones by *Plashing* or *Incision*, be to be practised any time of the Year; yet I prefer doing it in the Spring, especially making the larger Wounds, on the Account of the Winter Wets and Frosts,

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Frosts, which will then be over; tho' any danger from thence may easily be prevented, by only applying a little Cow-dung to the Wound. As to the *general* Practice, a watchful Eye will see Cause to use this Method, not only in the Winter, but all the Summer Season too, as Occasion and Necessity require.

N. B. A dry Summer naturally disposeth almost all Trees to bear well the following Year; therefore in a wet Summer, Fruit-Trees require more than ordinary Care and Art, to hinder their running into Wood and fruitless luxuriant Branches.

N. B. The Art of checking the Sap both in Root and Branches, may be very successfully apply'd to such flat Dwarfs, as are intended to be only about two Feet high, humouring the Borders, whether they be Apples, Plums or Pears: tho' it is most proper the Apples should be on Paradise Stocks, and the Pears on Quinces, the more naturally

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naturally to answer the Purpose of having less Wood, and a sufficient Quantity of Fruit. For indeed the true Art and Mystery of making a Tree bear Fruit, is only to Proportion the Degree of Sap and Vigour to the Quantity of Wood or Branches. When that Matter is once rightly adjusted, you have every thing that Beauty and Prosperity can give. So when a Tree wants Sap and Vigour, it languishes and dies; and when it has too much, it runs into Wood and fruitless Branches. How well this Proportion may be kept with respect to Fruit-Trees set in Pots, I am not as yet able to say; because I am but *now* making the Experiment of a Peach, an Apricot, a Fig, and a Cherry so ordered. There *can* be no danger of too much Vigour; all the Difficulty will be to give them *Moisture* and *Nourishment* enough in so small a Compass of Earth, and to preserve their Blossoms from Blasts and Frosts; which yet I hope
to

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to overcome, by *Housing* them a Nights in the Spring, and setting them pretty deep in the Ground in the Summer, on a good Exposition, allowing them plentiful Waterings.

But the Success of this being uncertain, I shall say no more of it; but shall leave this, and what else I have said on this Head to the Judgment of all ingenious Improvers of Art and Nature; whose modest Enquiries ought the rather to be encouraged by all wise and good Men; because the more we search, the more we still discover of the divine Bounty and Goodness to Mankind.



The Fourth and last General CAUSE of BARRENNESS.

There remains in the last Place to say something of a very different Cause of Unfruitfulness from any that have hitherto been taken notice of; and that is *cold unkind*

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Seasons; but especially *Frosts* and *Blasts* in the Spring. This will readily be granted to be, not the *Fault* but the *Misfortune* of the Gardener; and such a *Misfortune* too, as they who live on the Continent are not so subject to, and therefore in a great measure peculiar to us who live in an Island.

However, to remove all Cause of Complaint, and to keep us from repining, Providence has been very liberal to us in some peculiar *Blessings* other ways. We are not subject to the Excesses either of Cold or Heat; and Nature assisted by Art produces for us the choicest Fruits: We abound in that which is properly the *Staff* of Life; and, which crowns all other Blessings, we live under such an happy Government, that what we *have* we *enjoy*.

These Circumstances so desirable to us, and so much the Envy of our Neighbours, are by no means to be forgot

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forgot by us, when we remember the Infelicity of some unkind Seasons. And yet because these Frosts and sudden Blasts are so much the real Grief of the ingenious Gardener, when he sometimes sees all the Fruit of his Labour, and his Expectations brought to nothing even in one Night, it may be well worth the while to enquire, whether a better Remedy than what hath hitherto been thought on or practised, may not be found out to cure this great Evil and dangerous Enemy.

The general Method hitherto used by careful Gardeners to preserve Blossoms and tender Fruit from the Blast in the Spring, is to hang up Bas-mats or other warm Coverings, which are rolled up in the Day-time, and let down in the Evenings, when most danger is suspected. This Practice hath sometimes succeeded very well, and preserved some of the choicest Fruit: But there are these four In-
conve-

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conveniencies attend it. First, it is very chargeable to provide so many large distinct Mats, as every full grown Tree requires. Secondly, it mightily increaseth the Gardener's Care and Trouble to manage and adjust so many Mats every Morning and Evening, even in the most busy time of all the Year. Thirdly, Frosts do oftentimes come so unexpectedly, and even so late in the Year as the middle of *May*, that if the Mats happen not to be let down or continued, all former Care is lost, and most of the Fruit destroyed even in one Night. And yet, Fourthly, when the Mats are ordered and disposed as they should be, if high and black Winds arise, I have often found, that the Mats have done more harm than good, by their continual beating off the Blossoms and tender Shoots.

These Inconveniencies have put me often upon considering, whether a better and more effectual Remedy might

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might not be found to prevent the Mischief of these destroying Frosts; for which Purpose, if the following Discoveries and Directions prove of any real Service to the general and publick Good, I freely own the first Hints were made and given me by a very ingenious Gentleman and worthy Friend, himself a great Lover and Improver of vegetable Nature.

Now these Hints proceeded, I think, upon a right Supposition, that most of our Frosts and Blasts both in Spring and Autumn, *fall perpendicularly*; that is to say, the condensed Vapours *falling* from the upper Region do form themselves at Night toward the Surface of the Earth in Dews or wat'ry Drops, subject to be frozen by the Coldness of the Air: and therefore the more any thing lies open and exposed to this perpendicular *Descent* of Vapours, the more will it be subject to be *frozen*, or (which is the same thing) *blasted*. The Truth of which
is

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is confirmed to us both by Reason and Experience. As when a Fruit-Tree hath been set against a Slope-Wall, for the Convenience of receiving more of the Sun's Rays, we always find that *that* is the first and most blasted both in Spring and Autumn.

This therefore being the true State of the Case with respect to most of our destructive Blasts, a little Philosophy will teach us, that *horizontal Shelters* are the best Guard and Defence against *perpendicular Frosts*. And this is that which my worthy Friend made Experiment of in artificial ones made of Tiles or thin bits of Board fastened in the Wall, which he found (as I have myself also found since) to answer to a Wonder, and to secure the Fruit where-ever they were placed.

However these artificial Shelters thus *occasionally* placed, were rather used by way of Trial and Experiment, than

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than with any View to have them generally made use of in that manner. I have therefore since considered with myself, how these *horizontal Shelters* may be so contrived, as to make either little Trouble or Charge, and to be of general Use; especially to such as have a Fruit-Garden, such as I have above described, yet to make; or are willing to make new Walls for the greater Security of having Fruit.

Now the most plain and easy Method of doing this, so as to answer our Purpose all at once, is to lay Rows of Tiles in the Structure of the Wall at certain distances one above another, the Tiles jetting forward and hanging over the Plane of the Wall about an Inch and half. This is neither a difficult nor a chargeable Practice, if the Wall be of Brick, to place, betwixt every two or three Rows of Bricks, these *horizontal Shelters of Tile*; and if the Wall be of Stone, if the Joints be any thing regular,

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regular, it is not less easy. But now to avoid the Inconvenience and Unseemliness of Branches riding over the Edges of Tiles, it must be remembered, that at some convenient Distances in each Row of Tiles, there be left *void Places or Gaps* for the Wood-branches to pass; which Gaps should also be left wider at the bottom than the top of the Wall. It is very material also to observe, that the Rows of Tiles should not be laid exactly horizontal, but rather a little *dipping*, the better to shoot off all Wet.

But to make so considerable an Improvement in Gardening plain and intelligible, I have thought fit to annex a Figure of a Fruit-Tree growing against a Brick-Wall with horizontal Shelters*; that at one View may be seen, not only how naturally the Wood-branches may be carried thro' the several Gaps, and all the void

* See Fig. 3.

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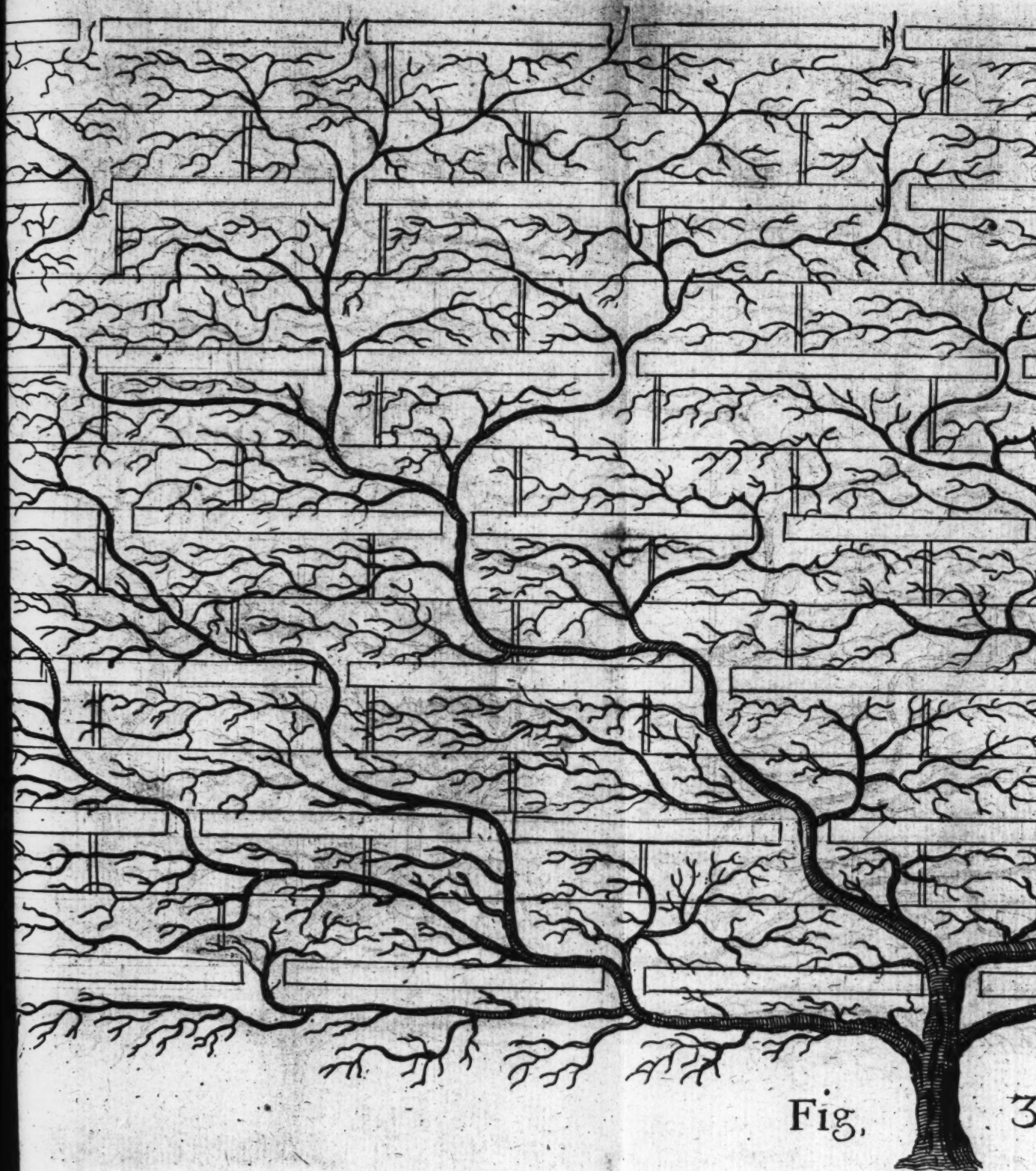
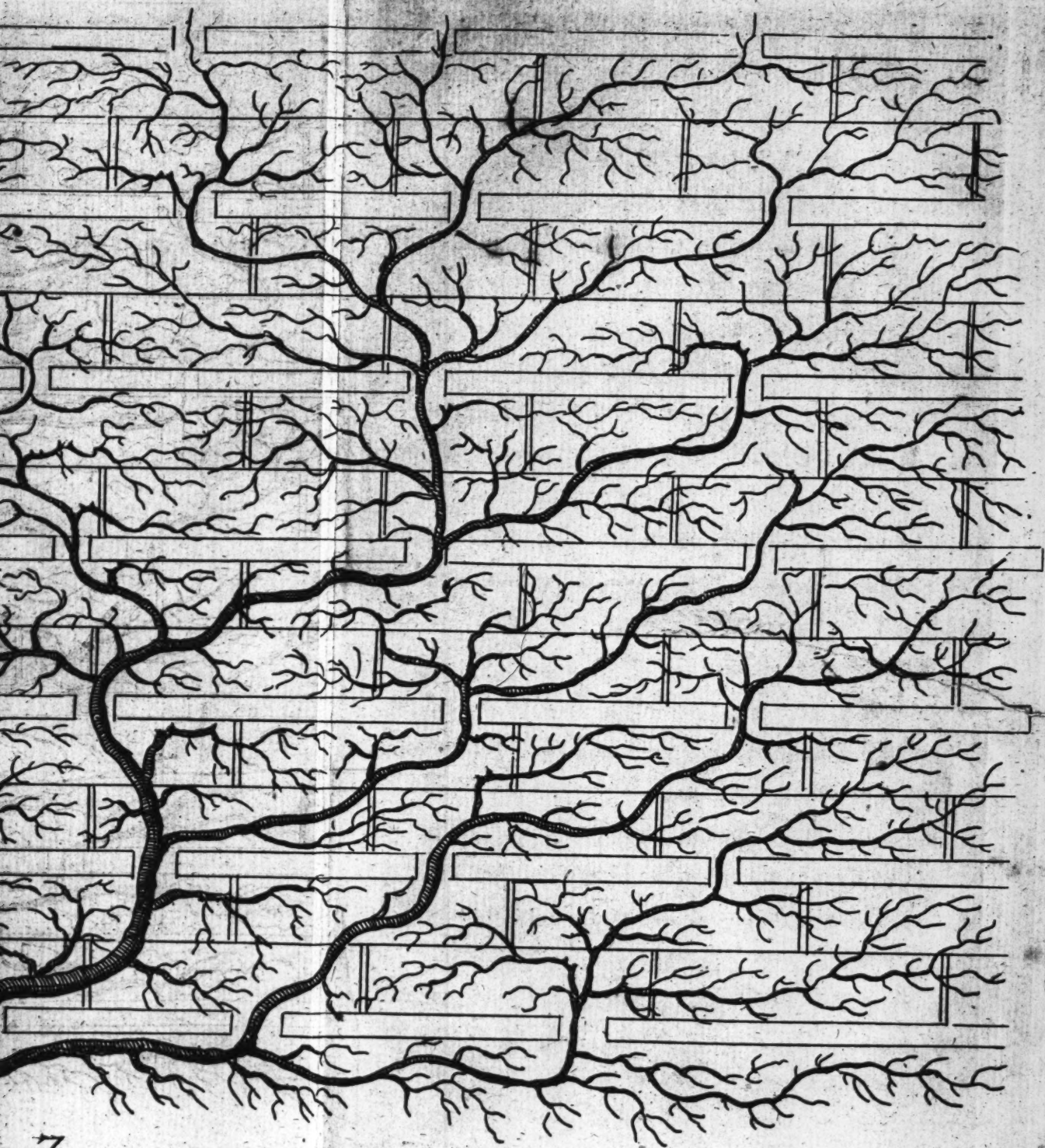


Fig.





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Places of the Wall filled; but also how a Tree managed according to Art, ought to grow and spread with horizontal Branches, and form itself in every part regularly.

How these *horizontal Shelters* of Tile may be fix'd to Walls already built, I am not so well able to say; tho' I believe it *may* be done, especially on Stone Walls where the Joints are generally wide enough to admit the Thickness of a Tile: But because the Benefits attending this Method of Improvement, are still more and greater than any I have yet taken notice of, it will be necessary to be a little more particular, to encourage the building these Walls. For,

(1.) By the Help of these Shelters, even in the most difficult Year, a good Quantity of the choicest Fruit may *almost* be depended upon, from such Branches and Blossoms as are well sheltered by the Tiles, as Experience hath sufficiently shewn.

(2.) And,

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(2.) And, which is very considerable, Fruits thus sheltered from perpendicular Colds and Blasts, I have experienced to be much *larger, better fed and finer tasted*, than those on the same Tree that are more exposed. And as a Consequence of this,

(3.) They are also *forwarder* and much *earlier ripe* than others; which is no inconsiderable Advantage; especially with respect to all late ripe Fruit, such as Peaches, Figs and Grapes, which in many cold Summers, without such or the like Helps, would never be ripe at all. For tho' one might be tempted to think rather the contrary, on the Account that some of the Meridian Rays of the Sun can hardly be supposed to reach the Fruit most sheltered; yet considering that the very Branch on which the Fruit grows hath the utmost Degree of Heat; that the Fruit itself, tho' not so much directly shone upon, is yet fed with the freest Circulation

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ulation of Sap, and kept in a more even Degree of Warmth; and lastly, that the Fruit thus sheltered receives no small additional Help by the Reflection of the Sun's Rays from the Row of Tiles below it: On all these Accounts it should not seem strange, that *horizontal Shelters* do really accelerate the ripening of Fruit, especially when it is so well confirmed by Experience.

(*Fourthly and Lastly;*) Walls built with these Rows of Tiles, will effectually cure that common Mistake in Gardeners, of leading Wood-branches perpendicularly; for if the Gaps be left, as they ought, not one directly over another in the several Rows, the Branches will unavoidably be disposed, as they ought, something horizontally, and the middle of the Tree kept free from great Wood. Indeed the Gardener must have a very unhappy Genius, if he can in these Cases prune a Fruit-Tree amiss. For if he do not

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leave the new Shoots too long, the *Necessity* of leading the Branches backward and forward (as may be seen in the Figure) will of Consequence produce bearing Wood.

N. B. It is of great Consequence to be pretty exact in keeping the *Projection* of the Tiles to about an Inch and half. For if more were allowed, and the Tiles stood farther out, too much of the Sun's Rays and Heat would be kept off from the Fruit and Branches; and if *less*, it would not be a sufficient Shelter. Either Extreme would be worse: And I believe it will be found that the middle Proportion here mentioned will best answer the Purpose of this Improvement.

N. B. In the Case of *black Wind-Frosts*, which come more horizontally, altho' these *Shelters* will be of singular Advantage; yet it may not be improper in *Extremities* to hang up Mats against some of the tenderest Nectarines and Peaches. The danger
of

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of having the Blossoms and tender Shoots beaten off by the Wind, will be effectually prevented by the *Projection* of the Tiles.

Note, Lastly. The foregoing Account of the *falling* of Vapours and forming themselves in Mists or Dews subject to be frozen, will serve to explain that very odd Phænomenon I have often taken notice of: *viz.* the Leaves and tender Shoots of a tall Ash-Tree in one of these blasting Mists may be observed to be frozen, and, as it were, sing'd in all the *bottom* and *middle* Parts, whilst the *upper* Part of the Tree, that is exalted above the Influence of the Mist, shall be left free and untouch'd.

I need not apply the Philosophy of this to the purpose of our *horizontal Shelters*: And a good Man need not be told, that tho' he is allow'd to guard himself by all prudential Methods against Misfortunes; yet his *safest* and *wisest* way is always to look

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upward;

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upward; to pray for and expect the supernatural Aids of divine Grace to sweeten and allay the Miseries of Life.

Thus I have gone thro' the Substance of what I at first purposed in this Treatise; *viz.* to point out the chief and most general Causes of Barrenness in a Fruit-Garden, and to provide proper Remedies against them. And how far that Design hath been answered in the foregoing Pages, I must leave to the candid Reader to judge: Only taking notice here, that what remains to be said in the concluding Part of this Treatise, shall be only some farther Observations and Improvements, relating to the Art of Gardening, loosely set down, without any great Regard to Order or Connexion.



Concerning



*Concerning the Great USE and Ad-
mirable QUALITIES of Un-
try'd EARTH.*

Without intending in the least to Derogate from what the ingenious Mr. *Evelyn* and others have said, concerning the several sorts of Earths and their Improvements, I think my self obliged to repeat and explain more largely, what I just hinted at in my first Part of Gardening; *viz.* the surprizing Success which I had from the use of *untry'd Earth*, both with respect to what has been sowed and planted in it.

By *untry'd Earth* I mean such warm, mellow, rich Soil, as lies next the Surface (after the Turf is pared off) about six or seven Inches deep, in such Places where neither Plough nor Spade hath ever come. Neither is this so difficult to be had as some may

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think,

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think, most Lordships (as far as my Observation has gone) affording it in one Place or other in sufficient Quantities; either in the lower Grounds and Meadows sometimes overflow'd, and so enrich'd with drift Sand; or in the several Wafts, Commons, or other By-places frequented by Cattel; and this Earth will in great measure discover itself to skilful Judges, in the several *Gramens*, by the Turf which grows upon it.

Taking it therefore for granted, that this rich *untry'd Earth* may be had without any great Charge or Difficulty, from the Experience I have had of its surprizing Productions, I cannot but again and again recommend the Use of it for *Amendments* and *Improvements* both in the Fruit and Kitchen Garden. This I am aware will be thought strange by all those who have a Fondness for Dung, and think no Riches can be had without it. But I am well satisfied no sort of

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of *Composition* made with Art, can be brought to exceed in all Respects *this* which Nature offers so freely to our Hands. For if you plant the choicest Fruit-Trees in this Earth, they presently discover an uncommon Healthfulness and Vigour: If you sow any of the tender sorts of annual Plants, if the Earth be discreetly chosen and made fine by a Sieve, you may presently perceive they *like* the Soil by their flourishing Looks and Colour. Even Mellons and Cucumbers, which are usually nursed with the greatest Art, and complemented with the richest artificial Mould, do prosper *here* to a wonder; and if they have but equal Care in other respects, need no other Compost than this *untry'd* Earth.

Nay farther, in a Case where Dung has alway been thought to be wanted in greatest Abundance, (and it is accordingly *loaded* in at a great Expence) I mean, in the making an Asparagus

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Bed, here all or most of that Expence is saved, and the Purpose as well, if not better, answered by the sole Use of *untry'd Earth* laid a Foot and half deep.

But lest it should be thought that I intend this *Nostrum* as a sort of *Catholicon*, or Quack-Pill, to serve all Purposes alike, I think my self obliged to say, that I know of no extraordinary Excellence in this Earth with respect to Flowers; especially the nicer and more tender sorts, but rather the contrary: So also for the several sorts of Exoticks and choice Shrubs, a proper artificial Composition may be much better and more suitable to *them* than this rich Earth: But then in all such Cases and Instances, as serve to make a Garden fruitful and profitable (which is to my present Purpose) as far as my Experience reaches, this *untry'd Earth* is much preferable to rotten Dung or the common artificial Composts, for these following Reasons.

First;

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First; Dung, where it is laid in any Quantity, mightily fills the Place with many noxious Weeds, which, without great Care and Pains, will be apt to choak whatever is sowed or planted in it. But a covering of this new Earth, being immediately fit for use, is not so subject to that Inconvenience.

Secondly, Altho' plentiful dunging the Soil must be own'd to be a great Amendment, and tends to make it rich and fruitful; yet Experience shews that all Legumes and annual Plants for eating, have by no means so *sweet* a Taste, as those rais'd in pure *wholesome* Mould; such as every one knows new broken up Ground produceth. Nitre and Sulphur are indeed the Life of Vegetation; but Dung, tho' full of them, contains also many other noxious heterogeneous indigested Juices, which generally give a strong and unsavoury Taste to every thing sowed and planted in it.

Whereas

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Whereas Earth taken from under an old Turf, having a sufficient Quantity of Nitre or Sulphur or both, sufficient for the Purpose of Vegetation, hath all its Parts well mixed and incorporated, all its Juices are mellowed and refined by Age, and want only to be exposed to the Air to exert themselves. For which Purpose Monsieur *Quintiney* rightly observes, that the Sense of smelling is a proper Judge of the Goodness of Earth; because an *ill Smell* will be sure to give an *ill Taste*.

This Matter is made plain to a Demonstration in the Quality of Asparagus planted in and about *London*; where having Plenty of Dung, they form their Beds altogether of it at a great Depth; the Effect whereof is, that they have indeed exceeding large Asparagus; but of a Colour so *unnatural*, and a Taste so *strong* and *unsavoury*, that none who have tasted our finer and more natural sort in
the

GARDENING, *Improv'd.* 91

the Countrey, will covet the former. And yet if it were any Recommendation of it to have it so very large, *untry'd Earth* may boast of Productions equal to those at *London*: But indeed to me it seems a Fault, to have Asparagus too large as well as too little, for this reason; because being subject to a sort of Pith and Hollow-ness in the middle, when it is very large, the Water it is boiled in is apt to lodge there, and gives a wat'ry insipid Taste to it. But still I may add,

Thirdly, That tho' most of the artificial Composts come nearest to the excellent Qualities of this *untry'd Earth*, especially when they have had sufficient time to mellow and incorporate; yet this is cheaper; always ready at hand, and immediately fit for use: By which means the greater Quantity of Dung will be spared and allotted for the Pasture and Corn Land.

N. B. A

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N. B. A Coat of this *untry'd Earth* laid only two Inches deep, is sufficient for most sorts of annual Plants from Seed, such as Beans, Peas, Lettuce, Spinage, Onions, Kidney Beans, &c. (except Carrots, Parsnips, &c. which require more) and will last well three or four Years without any other Amendment: And longer still, if only a little Coat of Dung be allowed as a Foundation for this Earth.

N. B. The Parings of Turf taken off where this Earth is found, if not otherways required, should be laid on Heaps to rot two or three Years; and this will produce incomparable Soil for Amendments; the oftner it is stirred, the better.

If it shall here be wondered at, that I say no more of the Management and Improvement of the Kitchen Garden, I have only this to say, That Subject seems to have been already exhausted, by the many several Authors that have treated of it.

Besides,

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Besides, there seems to be nothing difficult in it; Every Man that can but handle a Spade, being able and ready to give Instructions for what is proper to be done in all the several Parts of the Year. Only there is one thing relating to the Management of Hot-Beds, whereon Mellons and Cucumbers, &c. are wont to be raised, which it may not be amiss here to take notice of; because, tho' it hath been practis'd with Success by some of the Gardeners near *London*; yet other Persons curious in that Matter, not being apprized of it, may think themselves obliged for the Relation.

Instead of making the Glass Frames, as is usual, open at the bottom, they may be made with strong Wires crossing one another, so as to be able to support a Bed of Earth four Inches deep for the several Plants to grow in: And thus the whole may be lifted by four Men from one Hot-Bed to another,

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another, as occasion serves. This Method has these two very considerable Advantages attending it. First, this saves the Trouble and prevents the Danger of *transplanting*, which oftentimes proves fatal; but always proves a great Check to the Growth of these tender Plants: Secondly, here is no Intermision in the Growth of the Plants, nor any artificial Heat of the Hot-Bed lost or wasted, which in the ordinary Methods cannot be avoided; for there you must wait 6 or 7 Days, till the great Heat be abated, lest the tender Roots of the Plants be scorched: Whereas in the Case before us, you may allot just what Degree of Heat you please; for when the Heat is too violent, the Frame may be placed something hollow from the Bed; when it abates, it may wholly rest upon it; and when the Bed grows too cold, the Frame may be carried to another.

But

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But I leave this Matter with the Curious to apply it as they see occasion, and to make farther Improvements; intending here only to give some short Hints of what I suppose may be made useful to the Publick, and acceptable to all contemplative and ingenious Gentlemen. Hoping therefore that what follows may also prove so, I will add some Particularities relating to the raising and managing Fruit-Trees not yet touch'd on.

Experience having made it plain, of how great Consequence it is to have all the tenderer sorts of Fruit put upon right and proper Stocks by Inoculation, especially where the Soil is cold and wet: And it being also found to be a Matter of some Difficulty to make the Stones of the larger sorts of Plums to grow, seeing they commonly fail by being kept either too wet or too dry, I have thought upon and practis'd an Expedient, that doth, I think, effectually answer the present

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present Purpose, *viz.* to inoculate the common ordinary Plum-Stocks or Suckers with the Pear, Muske or Bonum magnum Plums, and then upon the Shoots of these to put the Peach, Nectarine, or Apricot, as you desire: And the Operation may be performed upon the first Years Production from the Plum-Stock; so that little Time need be lost.

The Propriety and Reasonableness of this Procedure is founded upon common Experience and Observation; that the Miscariage of these sorts of Fruit put upon wrong Stocks is always at the Place of Inoculation; where they either put out Gum and die, by being not exactly incorporated; or else so very much swell and overgrow the Stock, that the Head is not duly nourish'd; for want, I suppose, of proper Ducts and sufficient Juices below. I mention Plum-Suckers, not that I prefer *them*; but only that I think by frequent Removes in the Nursery,

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fery, they may be made to do well enough.

Altho' it be certainly known, that Grafting and Inoculation are the general Methods of *propagating* the several Kinds of Fruit already in being; yet *neither* of those Operations tend to the Production of any new Species; the Scion or Bud *always* following the Nature and Kind of the Tree from whence it was taken. From whence it follows, that all those several Species and different sorts of the same Fruit which our Gardens furnish us withal, were originally, (and in a *good Sense* accidentally) raised from the Seed, Stone, or Kernel of every *common Genus*, whether Pear, Apple, Plum, or Cherry, &c.

I have not my self had Leisure nor many Opportunities of making Experiments of this Nature; but thus much is certain, that in the Productions of Fruit from the Seed or Kernel, Nature *commonly* and for the most

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part degenerates, and you have *ordinarily* from such Seed or Kernels a much worse sort than that which was sowed. But then there is this *comfortable* Circumstance to be added, that now and then you have a sort proves altogether as good as the kind sowed; and *sometimes*, tho' not often, *much better and more excellent*; which has encouraged the Nursery Men to try Experiments, and has afforded those several *excellent* sorts we daily hear of, to invite the Curious to taste the Fruit.

However, not satisfied with this general Knowledge, my Curiosity has led me to enquire of others, of more Leisure and longer Experience, particularly as to Pears and Apples, whether they had observed the Degeneracy to be greater and more universal in the Seed sowed from grafted Fruit, or that which was taken from good Fruit *naturally* raised. The Answer I had from one Friend was, That

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That he could never observe the *latter* would much degenerate; for tho' 'twas often *different*, sometimes much *the same*, and sometimes, tho' rarely, *better*; yet that it hardly ever proved a Crab or Wilding: Whereas in the *former* Case, even from Fruit of the best sorts grafted, the Production was commonly worse, and for the most part did partake of the Nature of the Stock, and proved a Wilding or Crab.

On the other side, I have now by me a Letter from a worthy Clergyman in *Worcestershire*, which tho' it gives a seemingly different Account from the former; yet because there are some curious Experiments in It, I shall here insert it for the sake of the Publick.

Reverend Sir,

I Have now before me a Letter from a Friend, in which he tells me you have heard of my having Experience in raising Fruit-Trees by Kernels, and

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that

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that the same Seed hath produced Plants
of different Kinds; you desire to know
whether that Experiment hath been made
with the Kernels of Fruit that was grafted,
as well as of that raised by Seed, and
what difference I have observed between
them. I have rais'd great Numbers of
Fruit-Trees from Kernels, both from the
grafted Fruit, and from those raised from
Seed. And from the Kernels only of three
or four sorts of Apples, I have, I believe,
an hundred different sorts; some resembling
the Fruit sowed; some abundantly
better both in Colour and Taste, and some
of them perfect Crabs; but all of them distinguishable
from each other; and, according to my Observation,
the greater Number of the different Species
come from the Kernels of the grafted Fruit.
If this will be of any Service to you, I am sure
it will be a great Satisfaction to,

Sir, Your very affectionate Brother,
and most humble Servant,

Edw. Whitcombe.

If

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If these two different Accounts may be reconciled on a Supposition, that Mr. *Whitecombe's* Observations were made from the Kernels of Fruit grafted, not on *Crab-Stocks*, but on some of the *natural Apples* raised from Seed: Then the proper Use to be made from the whole, will be; That for all Persons curious in the Art of Nursery, the way that is most likely to succeed in getting new sorts, is to use the Stones or Kernels of the *natural* sorts that are good, or rather the Kernels of the good *natural* sorts, improved by grafting or Inoculation. But this also I leave with the ingenious Inquirers into vegetable Nature, for their farther Observations and Improvements, and proceed to

Note, Another thing worth remarking; *viz.* a very convenient Practice relating to the fastening the Branches of Fruit-Trees on old Walls. This I have observed to be done with great Expedition, by using only small Wil-

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lows in the Winter, and Rushes in the Summer turned over the Branch, and then twisted about a Nail already fastened in the Wall. Now the great Benefit and Usefulness of this Method will quickly appear to all such, as have no better than old Walls, composed of indifferent Stone with large Joints, for Fruit-Trees to grow against: For these sorts of mould'ring Walls are found to be much decayed and weakened, by the continual *draw-
ing* the Nails every Season, but by this Method are observed to last many Years.

I cannot well omit describing here a very useful Instrument, contrived by a very ingenious Gentleman and Neighbour, for the more safe and ready transplanting Trees out of the Nursery, or from one part of the Garden to another, as occasion requires. It is made exactly in the Shape of a little Tub, cut perpendicularly down the middle into two
semicir-

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semicircular Halves, something less at the bottom than the top: Which Semicircles being held together by Iron Hoops distinctly, are so contrived, as when they are used, to be held together only by Iron Hooks on one side, and drawn together by a long Iron Screw on the other. For after the circular Trench is made round the Tree, it will easily be perceived, that such an Instrument must be of great Use, to hold a sufficient Quantity of Earth about the Roots, and make its Removal safe, or very little injurious. I consider my Title Page, so need not use many Words: *Sapienti Verbum.* Once more.

Because the Grape is so noble a Fruit, when full ripe, some Years so difficult to be obtained, and therefore deserves our greatest Art to encourage it, I would recommend planting the Vine on such a *South* Exposition of the House or Out-houses, as (if possible) may have the Advantage of a

H 4

Slope

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Slope falling to the *South*: Which Slope (especially if it were paved with Brick, Stone or Quarrs, which is very adviseable) collecting and receiving more of the Sun's Rays, will consequently afford greater and stronger Reflections of the same from the several Angles of Incidence; and thereby much accelerate the ripening of the Fruit. I cannot easily be brought to think any Soil or Situation can be too dry for the Roots of a Vine, after having seen at *Barnwel* near *Oundle* in *Northamptonshire* a flourishing Vine grow from between the Joints of an old Castle Wall near 20 Feet high from the Ground, its Branches hanging downwards: And (as I was told) when it was carefully pruned and managed, it produced admirable Grapes.

N. B. Because the chief Beauty of Trees planted in Rows for Avenues consists in their being streight, regular and upright; and because there are

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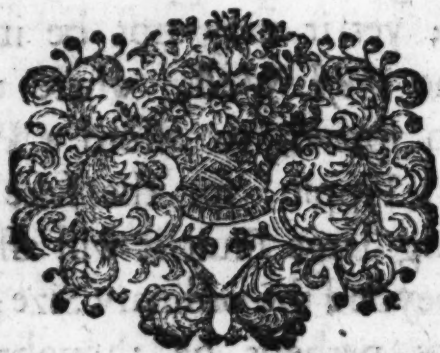
are many other Cases wherein it is very undesirable to have a Tree grow crooked and irregular, it may not be amiss to inform the Curious, that cutting such a Tree in the Ham or Bend of the Crook with a Knife perpendicularly, 6 Inches above and 6 below in two or three Places, will strangely facilitate its Reduction, and in three or four Years perfect its Cure, provided the Tree be but pruned up, and freed of all its Branches below and a little above the Bend, and care be taken every Year to renew the Slits.

N. B. Although it be contrary to common Practice and the Rules of Gardening to set Apple Trees against a Wall; yet it may not be improper on some *West* Wall, where there is room to spread, to afford a Place for a golden Pippin, for the sake of that surprizing large Fruit it will afford, so much beyond the ordinary Size; which may not perhaps be thought *better*: But if it be *bigger* and not *worse*, it cannot

cannot sure be unacceptable to behold
and taste such a *Bonum Magnum*.

Two glorious Qualities in whatsoe-
ver subject they meet, and are always
in some Degree or other a Resemblance
of the Divine Fountain of Goodness;
even of him who is the One supreme,
self-existent, independent, unoriginated
ὁ μόνος ἀγαθός, ὁ παντοκράτωρ, ὁ Θεός:
* To whom be Honour, Glory, Do-
minion and Power by Christ Jesus
throughout all Ages, World without
End! *Amen*.

* Rom 16. 27. Eph. 3. 21. 1 Pet. 5. 10, 11.



APPEN.



APPENDIX.

The following Letter was sent me from a Brother of mine in London. The Method he there gives for finding a Meridian Line appears to be the most accurate of any that I know of.

Dear Brother,

Understanding you intend to direct a Method for finding a Meridian Line in your Book of Gardening, it may be you may think it of Use to the Publick to have (beside yours) a short Description of a new and familiar way of doing it very exactly by the Pole-Star; Thus;

First, Adjust your Clock or Watch, as near as may be, by a Quadrant, or otherways. Then fix a strong Pole of about 14 Foot long as near as you can perpendicularly, and at 12 a Clock make a Mark at about 5 Foot distance

distance in the Shadow, where you are to fix another Pole of the same Height as before, which two Poles will be nearly in a Meridian. Then at the top of each of these Poles nail Pieces of Wood or Iron about 2 Foot long, yet so as to be moved upon occasion. At the ends of these fasten Lines of fine Cat-gut with leaden Weights at the end of them with a Liberty of slipping backward and forward, till the Eye, the two Strings, and the Pole-Star are in a right Line, at such time as the Pole-Star comes to the Meridian. To find which observe the following Directions.

Subtract the right Ascension of the Sun (which is found by the following Table for every Day in the Year) from the right Ascension of the Pole-Star (which is now 37 Minutes in time, and increaseth 1 Minute and 16 Seconds in 10 Years) the Remainder will correspond to the time of the Pole-Star's coming to the Meridian
above

above the Pole, and near 12 Hours before or after will be the time of its coming to the Meridian under the Pole. Thus because $11^{\circ}. 0'$ in Aries corresponds to 37 Minutes in time of right Ascension; when the Sun is there (which is *March 20.*) the Pole-Star comes to the upper Meridian at Noon. And because $191^{\circ}. 0'$ of the Ecliptick (where the Sun is *Sept. 22.*) hath $12^h. 37^m$. in time of Ascension, the Pole-Star comes to the same Meridian at Midnight: And in both Cases its Hours from that Meridian agree with the ordinary reckoning of Hours with us. At other times it comes sooner than the Sun, *viz.* about 4 Minutes every Day or an Hour in 15 Days. Thus *April* the 22d last Year, the Day of the great Eclipse, the Sun's right Ascension was $2^h. 41^m$. in time; which deducted from 37 Minutes, or $12^h. 37^m$. the Remainder is $9^h. 56^m$. which shews that the Pole-Star came to the upper Part of the Meridian at

9 a Clock and 36 Minutes before Noon; and at 9 at Night and about 34 Minutes past to the lower Part of the Meridian, which is nearly 4 Minutes for a Day or an Hour for 15 Days along the Ecliptick, and so in all other Cases whatsoever.

N. B. When the Sun's right Ascension exceeds 12 Hours 37 Minutes, you are to remember to add 24 Hours to the right Ascension of the Pole Star; the former being subtracted from the latter gives the time in the Afternoon of the Pole-Star's coming to the upper Meridian. Thus Jan. 5. the Sun's right Ascension is $19^{\text{h}}. 52^{\text{m}}$. which subtracted from $24^{\text{h}}. 37^{\text{m}}$. leaves $4^{\text{h}}. 45^{\text{m}}$. and thereby shews that the Pole-Star came to the upper Meridian at $\frac{3}{4}$ past 4 in the Afternoon.

Your two Strings being placed in the true Meridian, you may with great Exactness know when the Sun is in the Meridian, viz. by the Help of a smok'd Glass (to prevent the Sun's glaring in your

APPENDIX. III

your Eyes) bring your Eye close to the *Northern* String, and when your Eye, the two Strings, and the Centre of the Sun are all in a right Line, you may be assured 'tis exactly 12 a Clock. And because the Sun's Azimuth is swiftest at that time, you may in a few Seconds observe its Motion from the Strings.

N. B. If you set two Vessels of Water, so that each Weight at the two Strings be just covered, they will hang much the steddier; and if your Observation is made when 'tis very dark, it will be convenient to have a Candle held at the *Northern* String.

An exact Meridian thus obtained being not supposed to continue in that manner, it may not be amiss to direct the transferring it within-side the House, in order to answer readily and exactly all future Purposes, and assist the Curious to adjust Clocks, Sun-dials and Watches; to find the true bearing of all near or distant Places; and
(which

(which is very considerable) to find the exact Latitude of the Place, as will be easily observed by any one that hath but the least Skill in Trigonometry.

In order then to transfer your Meridian within-side the House, make or drill a hole in one of the upper Panes of Glass in a high Window, painting the Glass back in a Circle 3 or 4 Inches round the hole. This done, cause a Signal to be given when the Sun is exactly in your Meridian, and at that Instant make a Mark where the Centre of Light falls on the horizontal Floor. Then by the Help of a Plum-Line, bring your Eye, the Mark made on the Floor, and the Hole in the Glass all in a right Line, and the String will direct you to another Point in the same Line; from which two Points draw a strait Line made visible, and this will be a most exact Meridian. I am,

Dear Brother, yours affectionately,

London, Jan. 5.

1716,

EDWARD LAURENCE.

A Table

APPENDIX 113

A Table of the Sun's right Ascension in Time for every Day in the Year.

D.	Jan.		Feb.		March		April		May		June	
	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.
1	19	35	21	43	23	29	1	21	3	15	5	20
2	19	39	21	47	23	32	1	24	3	19	5	24
3	19	43	21	51	23	36	1	28	3	22	5	28
4	19	48	21	55	23	40	1	32	3	26	5	32
5	19	52	21	59	23	43	1	36	3	30	5	36
6	19	56	22	3	23	47	1	39	3	34	5	41
7	20	0	22	6	23	51	1	43	3	38	5	45
8	20	4	22	10	23	54	1	47	3	42	5	49
9	20	8	22	14	23	58	1	51	3	46	5	53
10	20	13	22	18	00	1	1	55	3	50	5	57
11	20	17	22	21	00	4	1	58	3	54	6	2
12	20	21	22	25	00	8	2	1	3	58	6	6
13	20	26	22	29	00	12	2	5	4	2	6	10
14	20	30	22	33	00	16	2	9	4	6	6	14
15	20	34	22	37	00	20	2	13	4	10	6	18
16	20	38	22	40	00	23	2	16	4	14	6	22
17	20	43	22	44	00	26	2	20	4	18	6	27
18	20	47	22	48	00	30	2	24	4	22	6	31
19	20	51	22	52	00	34	2	28	4	27	6	35
20	20	55	22	55	00	37	2	33	4	31	6	39
21	20	59	22	59	00	41	2	37	4	35	6	43
22	21	3	23	3	00	44	2	41	4	39	6	47
23	21	7	23	7	00	48	2	44	4	43	6	51
24	21	11	23	10	00	52	2	47	4	47	5	55
25	21	15	23	14	00	55	2	51	4	51	6	59
26	21	19	23	18	00	59	2	55	4	55	7	4
27	21	23	23	21	1	2	2	58	4	59	7	8
28	21	27	23	24	1	6	3	2	5	3	7	12
29	21	31	23	27	1	10	3	6	5	8	7	16
30	21	35	—	—	1	14	3	11	5	12	7	20
31	21	39	—	—	1	17	—	—	5	16	—	—

The Table continued.

D.	July.		August.		Sept.		Octob.		Nov.		Dec.	
	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.
1	7	24	9	26	11	20	13	9	15	9	17	17
2	7	28	9	30	11	24	13	12	15	13	17	21
3	7	32	9	34	11	28	13	16	15	17	17	25
4	7	36	9	37	11	32	13	20	15	21	17	30
5	7	40	9	41	11	35	13	24	15	25	17	34
6	7	44	9	45	11	39	13	27	15	29	17	39
7	7	48	9	49	11	42	13	31	15	33	17	43
8	7	52	9	53	11	46	13	35	15	37	17	48
9	7	56	9	56	11	50	13	39	15	42	17	52
10	8		10	0	11	53	13	42	15	46	17	57
11	8		5	10	4	57	13	46	15	50	18	
12	8		9	10	7	1	13	50	15	54	18	5
13	8	13	10	11	12	4	13	54	15	59	18	10
14	8	17	10	15	12	8	13	58	16	3	18	14
15	8	21	10	18	12	12	14	1	16	7	18	19
16	8	25	10	22	12	15	14	5	16	11	18	23
17	8	29	10	26	12	19	14	9	16	16	18	27
18	8	33	10	29	12	22	14	13	16	20	18	32
19	8	36	10	33	12	26	14	17	16	24	18	36
20	8	40	10	37	12	30	14	21	16	29	18	41
21	8	44	10	40	12	33	14	25	16	33	18	45
22	8	48	10	44	12	37	14	29	16	37	18	50
23	8	52	10	47	12	40	14	33	16	42	18	54
24	8	55	10	51	12	43	14	37	16	46	18	58
25	8	59	10	55	12	47	14	41	16	50	19	3
26	9		3	10	58	51	14	45	16	54	19	7
27	9		7	11	1	54	14	49	16	59	19	12
28	9	11	11	5	12	58	14	53	17	3	19	16
29	9	15	11	9	13	2	14	57	17	8	19	20
30	9	18	11	13	13	6	15	1	17	12	19	25
31	9	22	11	16	—	—	15	5	—	—	19	29

A Table

A Table shewing what Angle the Pole-Star makes from the Meridian at every Hour and half Hour before and after the Time of its coming to the Meridian both above and below the Pole.

Hours.	Distances from the North above the Pole.	Hours.	Distances from the North below the Pole.
0	0	0	0
1	12 3	6	6 3
1 1/2	1 0	5 1/2	5 3
1 1/2	1 1	5	7 3
2	1 1	4 1/2	8 3
2 1/2	2 1	4	8 3
3	2 2	3 1/2	9 2
3 1/2	3 2	3	9 2
4	3 3	2 1/2	10 1
4 1/2	4 3	2	11 0
5	4 3	1 1/2	11 0
5 1/2	5 3	1	12 0
6	5 3	12	0

The Reader may observe by this Table, that if his Observation was made $\frac{1}{2}$ part of an Hour before or after the time of the Pole-Star's coming to the Meridian, the Difference in finding a true Meridian by this Method will not be sensible.

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